Technical Documentation of the World Fiber Model

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CHAPTER 1

INTRODUCTION

Motivation and Objectives

The United States is the second largest cotton producer in the world behind China accounting for approximately 20 percent of the world production. In addition, the United States is also the largest cotton exporter with around 40 percent of the world market share. With declining domestic mill use due to textile trade liberalizations, the U.S. has become more dependent on the world market in recent years exporting as much as 70 percent of its domestic production. It is almost certain that the domestic cotton mill use in the U.S. will continue to decline in the future in the face of rising textile imports due to MFA (Multifiber Arrangement) elimination, NAFTA (North American Free Trade Agreement), CAFTA (Central American Free Trade Agreement) and various other free trade agreements. The global liberalization offers the US opportunities and challenges to expand its cotton export market. In that regard, understanding the international markets through improved policy modeling capabilities will help to better gauge the impacts of global trade liberalization on the competitiveness of the US cotton sector and enable it to adjust effectively to this new competitive environment.

The objective of this project is to develop and maintain a non-spatial partial equilibrium model of world fiber markets to respond to Congressional requests of information, analysis and advise on the expected behavior/response of the natural fiber markets (cotton, wool and mohair) to anticipated or potential changes in economic/trade, technological, and policy factors/trends, and about the probable impact of these changes on the U.S. natural fiber industry. Although several past studies such as Coleman and Thigpen, 1991; FAPRI, 1995; Bennett, 1999; Babcock and Cheng, 1999 have examined cotton supply and demand relationships, several features

differentiate the present analysis from the previous studies. First, this analysis is based on a structural econometric model that takes into account inter-fiber competition between natural fibers (cotton and wool) and man-made fibers (synthetics and cellulosics) in textile mill use. This allows substitution between cotton and man-made fibers at the mill level due to price changes. In addition, the man-made fiber prices are solved in the model to allow adjustment in one sector due to changes in the other sector. Secondly, major cotton producing and trading countries/regions are included in the model to avoid aggregation bias. In addition, for major countries such as the United States, China, and India, regional supply responses within the countries are estimated in order to account for heterogeneity in growing conditions arising out of climatic differences and availability of water and other natural resources that influence the mix of crops in each of the regions. This is important because elimination of U.S. cotton programs is likely to have varying effects on cotton producing regions and aggregate supply response may over or under estimate the policy effects. Finally, this model was estimated using more up-to-date data and recent policies such as Chinese WTO commitments, Agreement on Textile and Clothing (ATC), etc.

This study constructs a theoretically consistent framework that incorporates regional supply response for cotton, substitutability between cotton and man-made fibers at the mill level, and appropriate linkage between cotton and textile sectors. The model includes supply and demand models for the United States and 23 other major producing and consuming countries and regions: (1) Asia (China, India, Pakistan, Taiwan, South Korea, Japan and Other Asia); (2) Africa (Egypt Western Africa and Other Africa); (3) North America (Mexico, United States, and Canada); (4) Latin America (Brazil, Argentina, and Other Latin America); (5) Oceania (Australia); (6) Middle East (Turkey and Other Middle East); (6) Former Soviet Union

(Uzbekistan, Russia, and Other FSU); (7) Europe (European Union, Central and Eastern Europe, and Other Western Europe).

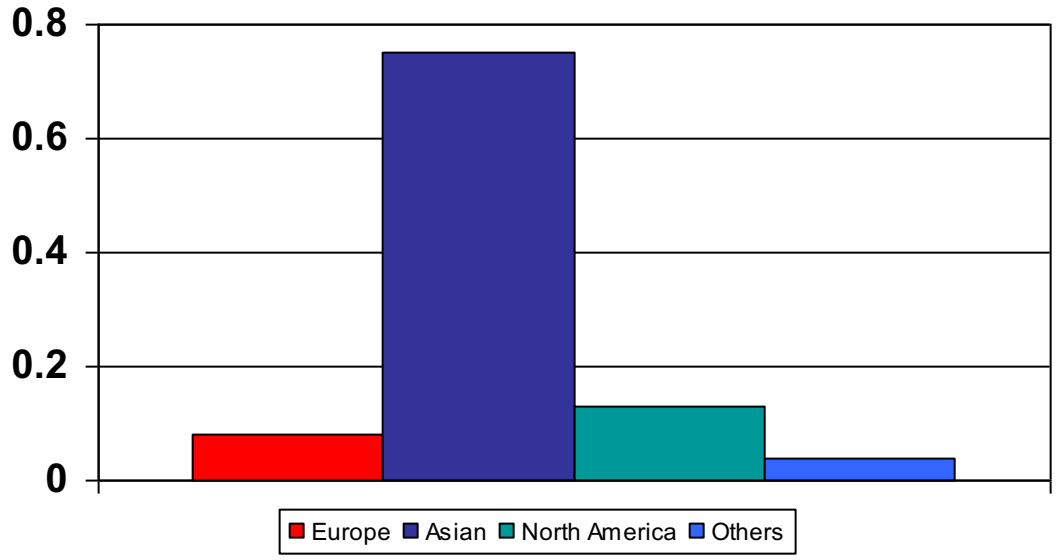
Background

Cotton is produced in nearly 80 countries. However, United States, China, India, Pakistan, and Uzbekistan account for about 74 percent of the total world cotton production. During the past decade, China, United States, India, respectively, accounted for 25, 20, and 13 percent of total world cotton production. On the consumption side, China, India and the U.S. accounted for half of the total world cotton consumption. In 2005/06, China accounted for 37 percent of the total mill use followed by India (15%), Pakistan (10%) and the U.S. (5%).

Apart from cotton, manmade fibers (synthetics and cellulosics) are the other important textile fibers in the world and collectively account for more than 95 percent of the total world fiber consumption. In 1960, cotton accounted for 68.4 percent of world fiber consumption followed by cellulosics (17.1%), wool (9.9%) and synthetics (4.6%) respectively. Over the last four decades, synthetics have been established as the dominant fiber with market share rising from less than 5 percent in 1960 to around 55% in 2004. In the same year, cotton accounted for around 40% of the total fiber consumption. Increased market share of synthetics in the fiber market has definitely altered the relationship between fibers and the man-made fibers are becoming increasingly important in the price formation of fibers.

Synthetic fiber accounts for 88% of the man-made fiber production in the world. Figure 1.1 illustrates the regional distribution of synthetic fiber production in 2004. Asia tops the list with 75 percent of total production followed by North America and Europe with 13 and 8 percent respectively. Within Asia, China, Taiwan, South Korea and Japan are the major manufacturers of man-made fibers with China as the largest manufacturer.

Figure 1.1. The Regional Distribution of Synthetic Fiber Production in 2004



Data Source

The datasets used in this study are compiled from various sources, which include Food and Agricultural Policy Institute (FAPRI) for the historical and projected macro variables (real GDP, exchange rate, population, and GDP deflator) and future competing crop prices; Production, Supply & Demand (PS&D) database of Foreign Agricultural Service (FAS) for cotton acreage, yield, production, mill use, ending stocks, and trade; and FAO World Fiber Consumption Survey and Fiber Organon for the fiber mill consumption and man-made fiber data. Other sources include direct contact with the institutes in different countries.

Organization of the Report

This documentation is organized as 14 chapters. We begin with an overview of our cotton world trade model. In chapters 3-13 an individual domestic fiber market is discussed, respectively. In each of these sections, a review of the domestic cotton policy, importance in the world market, and structure of the domestic model is presented. In chapter 14 we present statistical validation of the model.

CHAPTER 2
MODEL OVERVIEW

Standard Model Structure

As shown in Figure 2.1, the representative country model includes supply, demand and market equilibrium for cotton and man-made fibers. Cotton production in each country and region defined in the model is derived from behavioral equations of area and yield. Generally, acreage equation is specified as a function of the expected net returns for cotton and competing crops whereas yield is dependent on expected cotton price and time trend to account for technological development. In some instances expected prices are used in lieu of expected return due to non-availability of cost of production data. For major players such as United States, China and India, cotton production is estimated in a regional framework to capture regional differences in climate, water availability and other natural resources that influence crop mix in different parts of the country.

The cotton demand is estimated using a two-step process. In the first step, total fibers demand (cotton, wool, the cellulosic and synthetic) are calculated by summing fibers demand in apparel, home furnishing and industrial sectors. In the second step, total fibers are divided among cotton, synthetic, cellulosics and wool based on relative prices and other factors. Prices of man-made fibers are also endogenized in the model by having supply response for each of these sectors. Man-made fiber supply response, for both synthetic and cellulosic, is derived through the estimation of capacity and utilization equations for each market.

Apart from supply and demand models for cotton and other fibers, the model also includes behavioral equations for ending stocks and trade. Border policies tariffs, quotas and tariff-rate-

quotas are incorporated into the trade equations. A shown in figure 2.2, Cotton A-index and polyester prices are solved in the model by equalizing world exports and imports.

A stylized model specification for a representative country is presented in Table 2.1. The model specifies per capita fiber consumption as a function of the fiber and non-fiber prices and per capita income. In the second stage, total fiber production is allocated among various fibers based on relative prices. In the supply side, cotton acreage generally is specified as a function of own and competing crop expected net returns or prices and cotton yield is dependent on cotton price and time trend to capture technological change. For man-made fibers, capacity and utilization are modeled separately to estimate production and generally specified as function of past five years' man-made fibers and crude oil prices. Finally, export and import equations are specified as a function of domestic and international prices. For import equations, international prices are calculated by converting world price in domestic currency equivalent after adding appropriate tariffs. Similarly, for export equations, international prices are calculated by converting world representative price into domestic currency equivalent.

Table 2.2 contains income elasticities for the per capita fiber consumption equations and own and cross price elasticities for cotton mill demand equations in the second stage. Income elasticities range from 0.11 to 0.69, the lowest for Taiwan and highest for China. Most of the emerging markets such as China, India, Brazil and Mexico have income elasticities higher than 0.5. At the mill level, cotton is very responsive to its own price in most of the Asian and African countries/regions.

Table 2.3 reports cotton acreage response elasticities for major production countries. Cotton acreage response elasticities range from 0.10 to 0.54, with the highest in Mexico. The

relatively large elasticities in Mexico, Brazil, and Australia reflect greater flexibility and choice in producing alternative crops to cotton (Coleman and Thigpen, 1991).

Figure 2.1. Representative Country Model

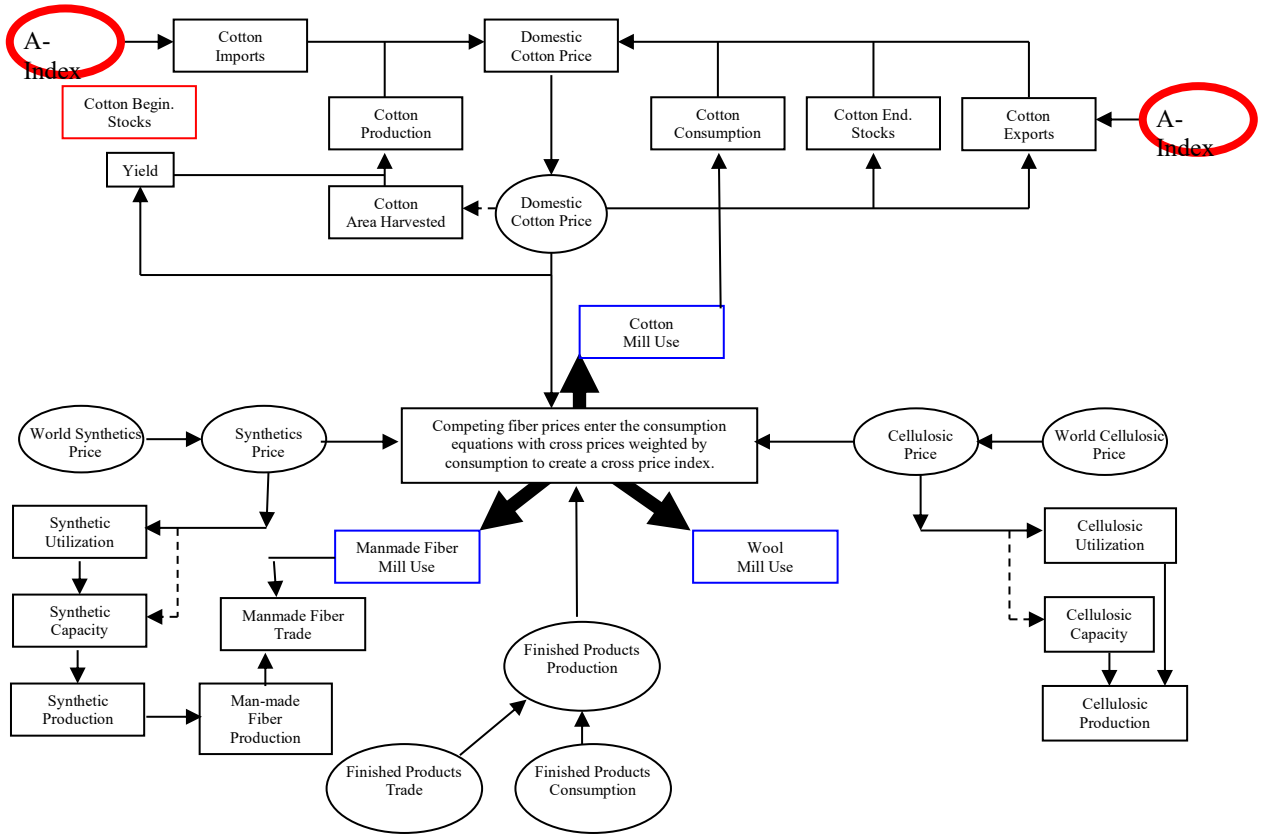


Figure 2.2. World Fiber Price Solving Mechanism

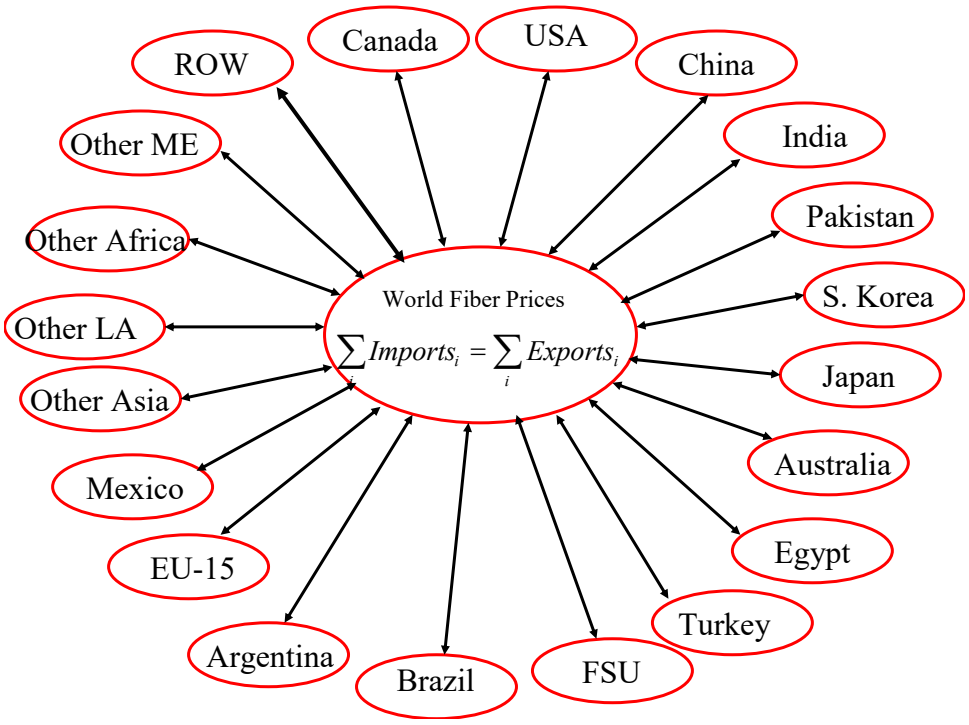


Table 2.1. Standard Specifications of Behavioral Equations

Variable	Behavior Equation
Per capita fiber consumption	$PC_f = \alpha_0 + \alpha_1 P_f + \alpha_2 I$
Share of cotton mill use	$DS_c = \beta_0 + \beta_1 (P_c / P_s)$
Share of man-made fiber mill use	$DS_m = \beta_0^m + \beta_0^m (P_c / P_s)$
Cotton supply	$S_{c,t} = \kappa_0 + \kappa_1 (P_{c,t-1})$
Man-made fiber supply	$S_{m,t} = \kappa_0^m + \sum_{k=1}^{5} \kappa_1^m (P_{m,t-k}) + \sum_{k=1}^{5} \kappa_2^m (P_{g,t-k})$
Cotton imports	$I_c = \phi_0 + \phi_1 (P_c / WP_c (1+T))$
Cotton exports	$E_c = \phi_{e0} + \phi_{e1} (P_c / WP_c (1-\tau))$
Cotton price linkage	$P_c = \gamma_0 + \gamma_1 WP_c$
Polyester price linkage	$P_m = \gamma_0 + \gamma_1 WP_m$

Note: The capital letter PC, S, D, DS, P, WP, I and E represents per capita consumption, supply, share of mill use, domestic price, world price, imports and exports respectively. The subscripts *f, c, m, w* represent fiber, cotton, man-made fiber, and world respectively. *t, t-1, t-k* represent current time period, one lag, and *k* lags. T, τ represent tariffs rate and export subsidy rate.

Table 2.2. Cotton Mill Use Elasticities for the Main Countries

Countries	Fiber Consumption Income Elasticities	Price Elasticities	
		Cotton	Polyester
Australia	0.23	-0.05	0.00
South Korea	0.03	-0.57	0.24
Taiwan	0.016	-0.50	0.35
Japan	0.16	-0.57	0.37
EU-15	0.12	-0.39	0.15
Mexico	0.58	-0.27	0.10
Brazil	0.53	-0.15	0.12
China	0.56	-0.57	0.16
India	0.40	-0.14	0.10
Pakistan	0.41	-0.28	0.18
Egypt	0.51	-0.74	0.24
World	0.30	-0.28	0.15

Table 2.3. Cotton Area Response Elasticities

Variable		Short-run	Long-run
US Cotton Planting Area			
Delta	Net Return	0.06	
south East	Net Return	0.12	
Southwest Irrigated	Net Return	0.19	
Southwest Dryland	Net Return	0.13	
West	Net Return	0.07	
China Cotton Harvesting Area			
Xinjinag		0.16	1.03
Yangtze River		0.18	0.76
Yellow river		0.21	0.96
Other		0.30	0.96
India Cotton Harvesting Area			
North		0.23	0.62
Central		0.23	0.72
South		0.16	0.32
Brazil Cotton Harvesting Area		0.57	1.60
Egypt Cotton Harvesting Area		0.25	0.58
Australia Cotton Harvesting Area		0.56	1.24
Uzbekistan Cotton Harvesting Area		0.13	0.26
Pakistan Cotton Harvesting Area		0.13	0.52
Mexico Cotton Harvesting Area		0.44	0.92

CHAPTER 3

U.S. Fiber Model

The U.S. fiber model follows the basic structure shown for the representative country model in figure 2.1. However, several modifications are made to the basic structure to make it more detailed and comprehensive. The U.S. model includes three sectors: (1) U.S. cotton supply, (2) U.S. man-made fiber supply, and (3) U.S. textile demand.

The U.S. cotton supply sector is divided into four production regions to account for varying regional acreage and yield responses to potential substitutive crops. These four regions in the U.S. are the Delta (Mississippi, Arkansas, Missouri, Tennessee, and Louisiana), Southeast (Georgia, Alabama, North Carolina, Florida, and Virginia), West (Arizona, California, and New Mexico), and Southwest (Kansas, Oklahoma, and Texas). The Southwest is subdivided into irrigated and dryland production areas to account for substantial variation within this region. Cotton producers in the irrigated Southwest may make considerably different acreage response decisions in light of a wider range of substitute crops than contiguous dryland producers. Cotton competes for acreage primarily with soybeans in the Delta and Southeast regions, with sorghum and wheat in the Southwest, and with corn and wheat in the West.

Schematic representation of the supply model is presented in figure 3.1. As shown in the figure, returns from crops which compete for acreage in each productive region influence the number of acres planted to cotton. The net returns for competing crops are borrowed from the U.S. crop model maintained by Food and Agriculture Policy Research Institute at the University of Missouri-Columbia. Expected net returns for cotton and competing crops include both market returns and all program payments such as direct payments, marketing assistance and loan

deficiency payments, and counter cyclical payments. Producer assessment is subtracted from the expected net return. Detailed descriptions of these programs are provided in the appendix.

Figure 3.2 represents the man-made fiber component of the U.S. fiber model. Man-made fiber production is derived through the estimation of capacity and utilization equations for synthetics and cellulosics. Production of each product is dependent on the past 5-year input and output prices (i.e., petroleum and polyester/rayon prices respectively) whereas the utilization rate depends on more recent input and output prices. The rayon price used in cellulosic capacity and utilization equations is estimated as a function of the polyester price.

The U.S. textile demand model is shown in figure 3.3. Cotton and non-cotton (man-made) textile demand is made up of three equations: (1) fiber or textile consumption, (2) mill use, and (3) trade. On the cotton side, textile consumption is determined by advertising expenditures, the U.S. textile price index, and real disposable personal income (DPI). Cotton textile trade is determined by the U.S. cotton textile price index, the Chinese textile price index, and the trade weighted Federal Reserve interest rate. Cotton mill use is determined by the U.S. cotton textile price index, the cotton market price, the polyester price, and non-agricultural research expenditures. Similarly, man-made textile fiber consumption is specified by the same components only with non-cotton variables. Table 3.1 presents the variables which explain the three components of textile fiber demand as well as whether the particular variable is positively or negatively correlated with demand for each commodity. Advertising and non-agricultural research expenditures are added to the model to reflect the positive influence both of these activities have on textile demand, both cotton and man-made. Absent from the trade equation for man-made textiles is the Chinese price index. This variable did not prove significant for this equation and was removed to improve model performance. The parameters for equations of

cotton textile consumption, non-cotton textile consumption, cotton mill use, and non-cotton mill use are estimated by PDLREG.

Table 3.1. U.S. textile demand variables.

	Cotton	Man-made
Consumption	Advertising (+) U.S. cotton textile price index (-) Real DPI (+)	Advertising (+) U.S. non-cotton textile price index (-) Real DPI (+)
Trade	U.S. cotton textile price index (+) Chinese textile price index (-) Trade-weighted Federal Reserve interest rate (+)	U.S. non-cotton textile price index (+) Trade-weighted Federal Reserve interest rate (+)
Mill Use	U.S. cotton textile price index (+) Cotton market price (-) Polyester price (+) Non-agricultural research expenditures (+)	U.S. non-cotton textile price index (+) Cotton market price (+) Polyester price (-) Non-agricultural research expenditures (+)

The U.S. cotton farm price is solved endogenously in the model through the equilibrium between cotton supply and cotton demand (production + imports + beginning stocks = mill use + exports + ending stocks). The U.S. polyester price (as a representative of world synthetic price) is solved in the model by equalizing total supply and demand (production = mill use). The U.S. cotton textile price index and non-cotton price index are solved by an equilibrium function of supply and demand (mill use + net imports = textile consumption).

Figure 3.1. Schematic Representation of U.S. Cotton Supply Model

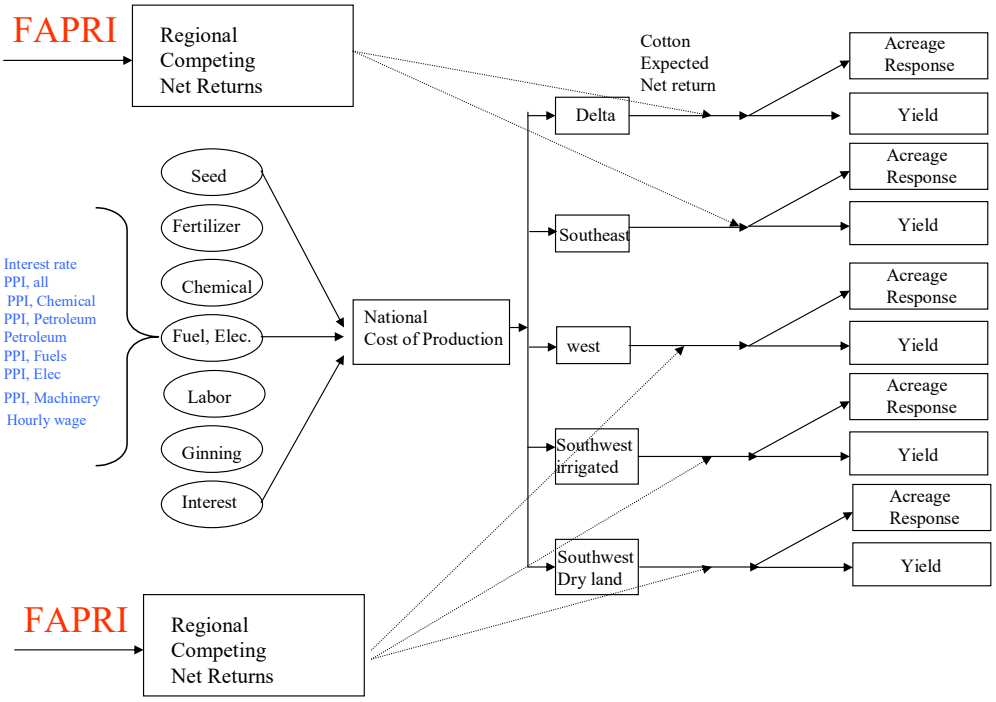


Figure 3.2. Schematic Representation of the Man-made Fiber Mode

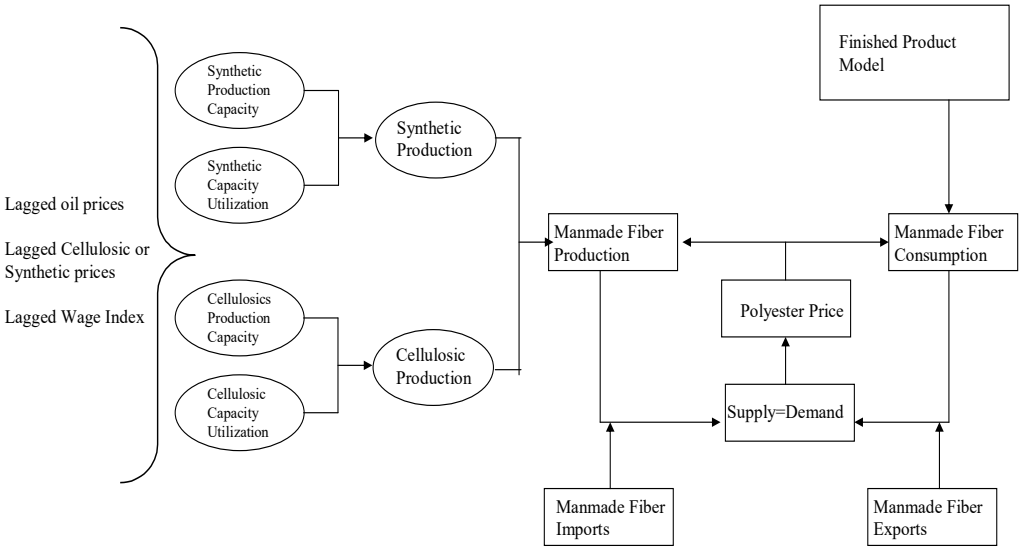
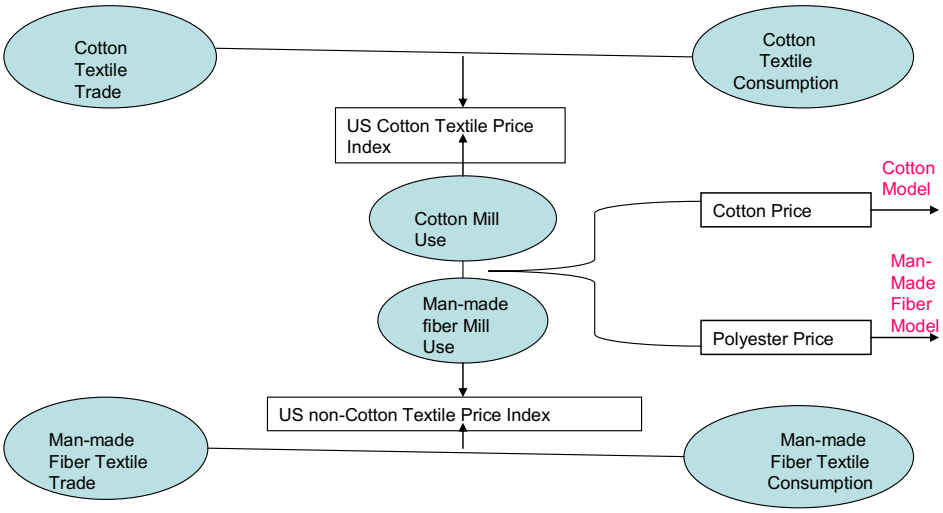


Figure 3.3. U.S. Cotton and Non-cotton Textile Models



Parameter Estimates of Behavioral Equations

3.1. Cotton Supply

3.1.1. Price linkage equations between regional and national farm price

3.1.1.1. Delta

CTLPUD = CUS680 + CUS681*(CTFMPUS*100)

Parameters	Estimates	Standard Error
CUS680	0.420	4.460
CUS681	0.991	0.072
Adj. R-Square	0.968	
D-W	1.974	
Period of Fit	1970-2004	

3.1.1.2. Southeast

CTLPUSE = CUS690 + CUS691*(CTFMPUS*100)

Parameters	Estimates	Standard Error
CUS690	-1.214	0.141
CUS691	0.988	0.279
Adj. R-Square	0.867	
D-W	1.998	
Period of Fit	1970-2004	

3.1.1.3. Southwest

CTLPUSW = CUS700 + CUS701*(CTFMPUS*100)

Parameters	Estimates	Standard Error
CUS700	3.074	1.130
CUS701	0.996	0.199
Adj. R-Square	0.953	
D-W	2.082	
Period of Fit	1970-2004	

3.1.1.4. West

CTLPUW = CUS710 + CUS711*(CTFMPUS*100)

Parameters	Estimates	Standard Error
CUS710	-2.489	0.763

CUS711	0.951	0.109
Adj. R-Square	0.956	
D-W	1.883	
Period of Fit	1970-2004	

3.1.1.5. ELS cotton

CTELSUS =CUS720 + CUS721*LAG(CTFMPUS)

Parameters	Estimates	Standard Error
CUS720	0.472	0.151
CUS721	0.829	0.243
Adj. R-Square	0.826	
D-W	1.778	
Period Pf Fit	1970-2004	

3.1.2 Linkage Equations between regional and national cost of production

3.1.2.1 Delta

LCTPCUD = CUS730 + CUS731*LOG(CTPCUS)

Parameters	Estimates	Standard Error
CUS730	-0.21	0.027
CUS731	0.999	0.104
Adj. R-Square	0.822	
D-W	1.871	
Period of Fit	1970-2004	

3.1.2.2 Southeast

LCTPCUSE = CUS740+CUS741*LOG(CTPCUS)

Parameters	Estimates	Standard Error
CUS740	0.095	0.026
CUS741	0.948	0.208
Adj. R-Square	0.997	
D-W	2.758	
Period of Fit	1970-2004	

3.1.2.3 Southwest irrigated

LCTPCUSWI = CUS750 + CUS751*LOG(CTPCUS)

Parameters	Estimates	Standard Error
CUS750	-3.169	0.183
CUS751	1.425	0.264
Adj. R-Square	0.799	
D-W	2.038	
Period of Fit	1970-2004	

3.1.2.4 Southwest dryland

LCTPCUSWD = CUS760+CUS761*LOG(CTPCUS)

Parameters	Estimates	Standard Error
CUS760	-3.193	0.259
CUS761	1.429	0.359
Adj. R-Square	0.909	
D-W	1.820	
Period of Fit	1970-2004	

3.1.2.5 West

LCTPCUW = CUS770+CUS771*LOG(CTPCUS)

Parameters	Estimates	Standard Error
CUS770	2.058	5.595
CUS771	0.696	0.984
Adj. R-Square	0.911	
D-W	0.960	
Period of Fit	1970-2004	

3.1.3 Acreage and Yield Equations

3.1.3.1 Delta Planted Area

CTPAUD = CUS850 + CUS851*(CTNRUD/SBNRUD) + CUS852*(CTEDPUD)

Parameters	Estimates	Standard Error
CUS850	3473.85	396.000
CUS851	25.196	25.600
CUS852	-2.826	0.380
Adj. R-Square	0.857	
D-W	1.905	
Period of Fit	1970-2004	

3.1.3.2 Delta Harvested Area

LCTHAUD = CUS900+CUS901*(CTPAUD)

Parameters	Estimates	Standard Error
CUS900	-0.061	0.149
CUS901	1.004	0.018
Adj. R-Square	0.99	
D-W	1.828	
Period of Fit	1970-2004	

3.1.3.3 Delta Yield

CTYDUD = CUS950 + CUS951*(LAG(ESPUD/SBPUD)) + CUS952*d04 + CUS953*(TRENDCN-10)

Parameters	Estimates	Standard Error
CUS950	382.642	103.000
CUS951	10.582	0.101
CUS952	233.800	0.954
CUS953	8.342	1.209
Adj. R-Square	0.94	
D-W	2.062	
Period of Fit	1970-2004	

3.1.3.4 Delta Production

CTPDUD =CTYDUD*CTHAUD/480

3.1.3.5. Southeast Planted Area

CTPAUSE = CUS860 + CUS861*(CTNRUSE/SBNRUSE) + CUS862*(CTEDPUE)

Parameters	Estimates	Standard Error
CUS860	495.360	32.600
CUS861	586.065	20.200
CUS862	-5.729	2.025
Adj. R-Square	0.997	
D-W	1.611	
Period of Fit	1970-2004	

3.1.3.6. Southeast Harvested Area

LCTHAUSE = CUS910 + CUS911*(CTPAUSE)

Parameters	Estimates	Standard Error
CUS910	0.032	0.01
CUS911	1.000	0.21
Adj. R-Square	0.95	
D-W	2.071	
Period of Fit	1970-2004	

3.1.3.7. Southeast Yield

CTYDUSE = CUS960 + CUS961*(LAG(ESPUSE/SBPUSE)) + CUS963*(CTSUUE)
+ CUS962*(TRENDCN-10)

Parameters	Estimates	Standard Error
CUS960	209.642	49.700
CUS962	5.001	0.041
CUS963	0.155	0.540
CUS961	26.478	0.182
Adj. R-Square	0.817	
D-W	1.923	
Period of Fit	1970-2004	

3.1.3.8. Southeast Production

CTPDUSE = (CTHAUSE*CTYDUSE)/480

3.1.3.9. Southwest irrigated Planted area

CTPAUSWI =CUS870+CUS871*(CTNRUSWI/GHNRUSW) + CUS872*(CTEDPUUD)

Parameters	Estimates	Standard Error
CUS870	2012.102	247.100
CUS872	-6.0546	2.324
CUS871	110.312	23.670
Adj. R-Square	0.819	
D-W	1.875	
Period of Fit	1970-2004	

3.1.3.10. Southwest irrigated Harvested area

LCTHAUSWI = CUS920 + CUS921*LOG(CTPAUSWI)

Parameters	Estimates	Standard Error
CUS920	0.496	0.43
CUS921	0.921	0.259
Adj. R-Square	0.857	
D-W	1.960	
Period off Fit	1970-2004	

3.1.3.11. Southwest irrigated Yield

CTYDUSWI = CUS970 + CUS971*(LAG(ESPUSW/SGPUSW)) + CUS972*(RAINUU)
+ CUS973*(TRENDCN-10)

Parameters	Estimates	Standard Error
CUS970	256.323	336.000
CUS971	0.930	0.133
CUS972	6.104	0.473
CUS973	11.431	0.553
Adj. R-Square	0.842	
D-W	1.894	
Period of Fit	1970-2004	

3.1.3.12. Southwest irrigated Production

CTPDUSWI = (CTHAUSWI*CTYDUSWI)/480

3.1.3.13. Southwest dryland Planted Area

CTPAUSWD = CUS880 + CUS881*(CTNRUSWD/GHNRUSW) + CUS882*(CTEDPUUD)

Parameters	Estimates	Standard Error
CUS880	3855.269	236.400
CUS881	209.027	17.200
CUS882	-3.132	1.159
Adj. R-Square	0.863	
D-W	1.839	
Period of Fit	1970-2004	

3.1.3.14. Southwest dryland Harvested area

LCTHAUSWD =CUS930+CUS931*LOG(CTPAUSWD)

Parameters	Estimates	Standard Error
CUS930	0.338	0.181
CUS931	0.933	0.350
Adj. R-Square	0.835	
D-W	2.042	
Period of Fit	1970-2004	

3.1.3.15. Southwest dryland Yield

CTYDUSWD = CUS980 + CUS981*(LAG(ESPUSW/SWHPUSW)) + CUS982*(TREND)

Parameters	Estimates	Standard Error
CUS980	264.363	97.745
CUS981	1.408	0.577
CUS982	2.250	0.119
Adj. R-Square	0.848	
D-W	1.574	
Period of Fit	1970-2004	

3.1.3.16. Southwest dryland Production

CTPDUSWD = (CTHAUSWD*CTYDUSWD)/480

3.1.3.17. West Planted Area

CTPAUW = CUS890 + CUS891*(CTNRUW/WHNRUW) + CUS892*(LAG(CTPAUW))

Parameters	Estimates	Standard Error
CUS890	34.173	42.700
CUS891	4.28	0.199
CUS892	0.829	0.213
Adj. R-Square	0.817	
D-W	1.918	
Period of Fit	1970-2004	

3.1.3.18. West Harvested Area

LCTHAUW = CUS940+CUS941*LOG(CTPAUW)

Parameters	Estimates	Standard Error
CUS940	-0.04	0.110
CUS941	1.00	0.015
Adj. R-Square	0.845	
D-W	2.058	
Period of Fit	1970-2004	

3.1.3.19. West Yield

CTYDUW = CUS990 + CUS991*(LAG(ESPUW/WHPUW)) + CUS992*(CTSUUW) + CUS993*(TREND)

Parameters	Estimates	Standard Error
CUS990	675.937	22.800
CUS991	15.022	5.139
CUS992	0.171	1.308
CUS993	8.721	0.496
Adj. R-Square	0.878	
D-W	1.807	
Period of Fit	1970-2004	

3.1.3.20. West Production

CTPDUW = (CTHAUW*CTYDUW)/480

3.1.3.21. ELS production

ELSCTPUS = CUS1000 + CUS1001*CTELSUS

Parameters	Estimates	Standard Error
CUS1000	5.428	0.800
CUS1001	310.651	63.400
Adj. R-Square	0.998	
D-W	2.062	
Period of Fit	1970-2004	

3.1.4 Total Area and Production

ULCTUS = CTPDUW + CTPDUSWD + CTPDUSWI + CTPDUSE + CTPDUD
CTPPRUS = (ULCTUS + ELSCTPUS)/(2204.622/480)
CTHAUS = (CTHAUD + CTHAUSE + CTHAUSWI + CTHAUSWD + CTHAUW)/2.471

3.2. Cotton Mill use

3.2.0 Cotton Textile

3.2.0.1 Cotton Textile Consumption

TCFCUS = CUS2010 +CUS2011 * CTFPIUS/CPIU+CUS2012*RDPI +CUS2013*CPIE/CPIU +CUS2014*QUOTA+CUS2015*MEXPND/CPIU + CUS2016*LAG(MEXPND/CPIU) + CUS2017*LAG2(MEXPND/CPIU);

Parameters	Estimates	Standard Error
CUS2010	6471.63	2590.7
CUS2011	-4410.26	2232.1
CUS2012	1.00	0.21
CUS2013	-4394.48	788.1
CUS2014	-386.00	241.2
CUS2015	2268.9	458
CUS2016	3025.2	611
CUS2017	2268.9	458
Adj-R square	0.94	
D-W	2.09	
Period of Fit	1978-2004	

3.2.0.2 Cotton Textile Net Imports

CFNMUS = CUS2030 + CUS2031*CTFPIUS*(1-WCTIAUS)/CPIU + CUS2032*XCHRIDX +CUS2033*TXPIDCN/FDPIDCN + CUS2034*RDPI;

Parameters	Estimates	Standard Error
CUS2030	-9287.57	2896.2
CUS2031	2670.25	2298.8
CUS2032	4.89	4.25
CUS2033	-1562.33	366.2
CUS2034	2.18	0.16
Adj. R square	0.99	
D-W	2.09	
Period of fit	1979-2004	

3.3.0.3. Cotton mill use

CTUMIUS*2.204622 = CUS2020 + CUS2021*CTFPIUS/CPIU +CUS2022*(CTMPUS-0.85*CTSWPUS)/(CPIU/100)+CUS2023* CPIE/CPIU +CUS2024*RWAGE
+ CUS2025*USSSPC/CPIU + CUS2026*LAG(CTUMIUS*2.204622)+CUS2027*QUOTA1 + CUS2028*DSTRUC2 + CUS2029*D99 + CUS20210 * LAG(NAEXPND/CPIU) + CUS20211*LAG2(NAEXPND/CPIU) + CUS20212*LAG3(NAEXPND/CPIU);

Parameters	Estimates	Standard Error
CUS2020	7034.14	2213
CUS2021	968.23	1813
CUS2022	-731.11	663.4
CUS2023	-5877.94	668.1
CUS2024	-26.39	14.0
CUS2025	1788.74	818.2
CUS2026	0.48	0.10
CUS2027	-544.81	189.4

CUS2028	-358.72	176.6
CUS2029	517.19	176.6
CUS20210	5958.9	2004
CUS20211	7945.2	2004
CUS20212	5958.9	2004
Adj. R-Square	0.98	
D-W	2.44	
Period of Fit	1979-2004	

3.2.0.3 Cotton Textile Market Clearing Identity

CFNMUS = TCFCUS - CTUMIUS;

3.2.1. Man-made Fiber Textile

3.2.1.1. Man-made Textile fiber consumption

=**cus2070**-**cus2071** * MFFPIUS /CPIU
+ **cus2072***RDPI-**cus2073***CPIE/CPIU
+cus2074*(d89+d90+d91)+**cus2076***MEXPND/CPIU
+**cus2077***LAG(MEXPND/CPIU)
+**cus2078***LAG2(MEXPND/CPIU)+cus2075*trendcn
-TMFCUs;

Parameters	Estimates	Standard Error
CUS2070	20852	8923
CUS2071	-15692	10189
CUS2072	3.6071	0.89
CUS2073	-5887	1752
CUS2074	-606.47	251.53
CUS2075	-957.46	357.50
CUS2076	1901.18	1101
CUS2077	2534.90	1469
CUS2078	1901.18	1101
Adj. R-Square	0.958	
D-W	1.966	
Period of Fit	1975-2004	

3.2.1.2. Man-made Fiber Textile Net Imports

=CUS2060 +**CUS2061***MFFPIUS/CPIU
+**cus2062***lag(MFNTUS)+**cus2063***RDPI+cus2064*(d79+d89+D90+d91+d95+D96)
+**cus2065***d02-MFNTUS;

Parameters	Estimates	Standard Error
CUS2060	-2944.28	1312.15
CUS2061	2726.88	1498.64
CUS2062	0.36	0.11
CUS2063	0.72	0.08
CUS2064	-325.42	65.78
CUS2065	518.89	147.64
Adj. R-Square	0.978	
D-W	1.47	
Period of Fit	1983-2004	

3.2.1.3. Man-made Fiber Mill Use

MMMDUs***2.204622**=**CUS2050**
+**CUS2051***(CTMPUs-**0.85***CTSWPUs)/(CPIU/**100**)
+CUS2052* CPIE/CPIU +**CUS253***MFFPIUS/CPIU
+CUS2054*USSSPC/CPIU +**CUS2055***LAG(MMMDUs***2.204622**)
+**CUS2056***LAG(NAEXPND/CPIU)+ **CUS2057***LAG2(NAEXPND/CPIU)
+**CUS2058***LAG3(NAEXPND/CPIU)+CUS2059*D81

Parameters	Estimates	Standard Error
CUS2050	4387	1775
CUS2051	1607	1703
CUS2052	-2807	1325
CUS2053	4162	0
CUS2054	-3519	2228
CUS2055	0.59	0.13
CUS2056	5143	3581
CUS2057	6857	4775
CUS2058	5143	3581
CUS2059	-885.75	535
Adj. R-Square	0.94	
D-W	2.70	
Period of Fit	1986-2004	

3.4. Man-made Fiber Production

3.4.1. Synthetics production Capacity

```
LSNCCPUS = CUS30 + CUS31*
          (0.2*100*(LAG3(AOILP/GDDNCUS) +
         LAG4(AOILP/GDDNCUS) + LAG5(AOILP/GDDNCUS)  +
         LAG6(AOILP/GDDNCUS) + LAG7(AOILP/GDDNCUS)))
         +CUS32*(0.2*100*(LAG3(USSSPC/GDDNCUS) +
         LAG4(USSSPC/GDDNCUS)  + LAG5(USSSPC/GDDNCUS)
```

+LAG6(USSSPC/GDDNCUS) +
LAG7(USSSPC/GDDNCUS)))+CUS33*LAG(SNCCPUS)+CUS34*d89

Parameters	Estimates	Standard Error
CUS30	620.82	225.811
CUS31	-5.28	3.063
CUS32	2.24	0.358
CUS33	0.93	0.091
CUS34	675.19	258.34
Adj. R-Square	0.926	
D-W	2.015	
Period of Fit	1970-2004	

3.4.2. Synthetics utilization

LSNUCPUS = CUS40 + CUS41*((AOILP/GDDNCUS)
CUS42* ((USSSPC/GDDNCUS) + CUS44*bshift75 +CUS45*d78
+CUS79*d80+CUS710*d81+ CUS43*LOG(LAG(SNUCPUS))

Parameters	Estimates	Standard Error
CUS40	-0.21	0.066
CUS41	-0.23	0.238
CUS42	0.015	0.480
CUS43	2.18	1.646
CUS44	-0.35	0.13
CUS45	0.48	0.16
CUS46	0.32	0.16
CUS47	-0.72	0.18
Adj. R-Square	0.721	
D-W	2.317	
Period of Fit	1970-2004	

3.4.3. Synthetic Total Production

SNPPRUS =SNCCPUS*SNUCPUS

3.4.4.4. Cellulosics production Capacity

LCLCCPUS = CUS60 + CUS61* (**0.2***(LAG3(AOILP/GDDNCUS)
+ LAG4(AOILP/GDDNCUS) + LAG5(AOILP/GDDNCUS)
+ LAG6(AOILP/GDDNCUS) +LAG7(AOILP/GDDNCUS)))
+ CUS62* (**0.2***(LAG3(USRSPC/GDDNCUS)+LAG4(USRSPC/GDDNCUS)
+ LAG5(USRSPC/GDDNCUS) + LAG6(USRSPC/GDDNCUS)
+LAG7(USRSPC/GDDNCUS)))+CUS63*LAG(CLCCPUS)

Parameters	Estimates	Standard Error
CUS60	-140.45	5134
CUS61	-105.69	11.11
CUS62	27.92	20.06
CUS63	0.91	0.34
Adj. R-Square	0.902	
D-W	2.183	
Period of Fit	1970-2004	

3.4.5. Cellulosics utilization

LCLUCPUS = CUS70 + CUS71*(AOILP/GDDNCUS)
CUS72*(USRSPC/GDDNCUS)+CUS73*LAG(CLUCPUS)

Parameters	Estimates	Standard Error
CUS70	0.26	0.011
CUS71	-2.25	0.55
CUS72	0.69	0.24
CUS73	1.40	0.55
Adj. R-Square	0.88	
D-W	1.75	
Period of Fit	1970-2004	

3.4.6. Cellulosics production

CLPPRUS=CLCCPUS*CLUCPUS

3.4.7. Cellulosics price transmission equation

LUSRSPC = CUS90+CUS91*LOG(USSSPC)

Parameters	Estimates	Standard Error
CUS90	-1.491	0.491
CUS91	0.996	0.116
Adj. R-Square	0.869	
D-W	1.983	
Period of Fit	1970-2004	

3.5. Fiber Trade and Ending Stock Equations

3.5.1. Cotton Exports

LCTEXTUS = CUS10 + CUS11*(CTAHAUS/CTMPUS) + CUS12*(CTPPRUS)

Parameters	Estimates	Standard Error
CUS10	-1740.98	4.213
CUS11	1407.71	0.273
CUS12	0.50	0.180
Adj. R-Square	0.874	
D-W	1.601	
Period of Fit	1970-2004	

3.5.2. Cotton Imports

LCTIMTUS = CUS20+CUS21*(CTAHAUS/CTMPUS)+CUS22*LOG(LAG(CTIMTUS))

Parameters	Estimates	Standard Error
CUS20	28.78	14.55
CUS21	-0.15	0.05
CUS22	0.25	0.11
Adj. R-Square	0.824	
D-W	2.064	
Period of Fit	1970-2004	

3.5.3. Ending stock

LCTCESUS = CUS1010 + CUS1011*(CTMPUS***100**/(GDDNCUS/**100**)) +
CUS1012*(CTPPRUS + LAG(CTCESUS)) + CUS1013*SHIFT85

Parameters	Estimates	Standard Error
CUS1010	6175.21	5.163
CUS1011	-35.43	0.208
CUS1012	0.44	0.633
CUS1013	2196.87	0.105
Adj. R-Square	0.801	
D-W	2.108	
Period of Fit	1970-2004	

3.6 Identity Equation

3.6.1. Cotton Identity

0=CTPPRUs-CTUMIUs+lag(CTCESUs)-CTCESUs-CTEXTUs+CTIMTUs;

3.6.2. Man Made Fiber Identity

0=MMFPRAG-MFCPCAG+MMFPRAU-MFCPCAU+MMFPRBR-MFCPCBR+MMFPRCA-
MFCPCCA+CLPRCN+SNPRCN-MFCPCCN+MMFPREC-
MFCPCEF+MMFPREG+MMFPREU-MFCPCEU
+MMFPRFS+MMFPRIN-MFCPCIN+MMFPRJP-MFCPCJP+MMFPRLA-MFCPCLA
+MMFPRMX-MFCPCMX+MMFPROA-MFCPCOA+MMFPROF-MFCPCTF
+MMFPROM-MFCPCME+MMFPRPK-MFCPCPK+MMFPRKR-MFCPCKR
+MMFPRTK+MMFPRTW-MFCPCTW
+(CLPPRUS+SNPPRUS)/**2.204622**-MMDDUS;

3.7. Price Index Linkage

3.7.1. Apparel Price Index With Respect To Cotton Textile Price Index

LOG(APOUTPUS)=CUS160+CUS161*LOG(CTFPIUS);

Parameters	Estimates	Standard Error
CUS160	-0.588	0.308
CUS161	1.133	0.068
Adj. R-Square	0.864	
D-W	1.164	
Period of Fit	1970-2004	

3.7.2. Broadwoven Price Index With Respect to Cotton Textile Price Index

LOG(BWOUTPUs)=CUS620+CUS621*LOG(CTFPIUS);

Parameters	Estimates	Standard Error
CUS620	-0.534	0.277
CUS621	0.893	0.062
Adj. R-Square	0.830	
D-W	1.171	
Period of Fit	1970-2004	

3.7.3. Rug and Other Cover Floor Output Price Index With Respect to Cotton Textile Price Index

LOG(CFOUTPUs)=CUS630+CUS631*LOG(CTFPIUS);

Parameters	Estimates	Standard Error
CUS630	0.142	0.273
CUS631	0.979	0.061
Adj. R-Square	0.858	
D-W	1.141	
Period of Fit	1970-2004	

Figure 3.1. Schematic Representation of U.S. Cotton Supply Model

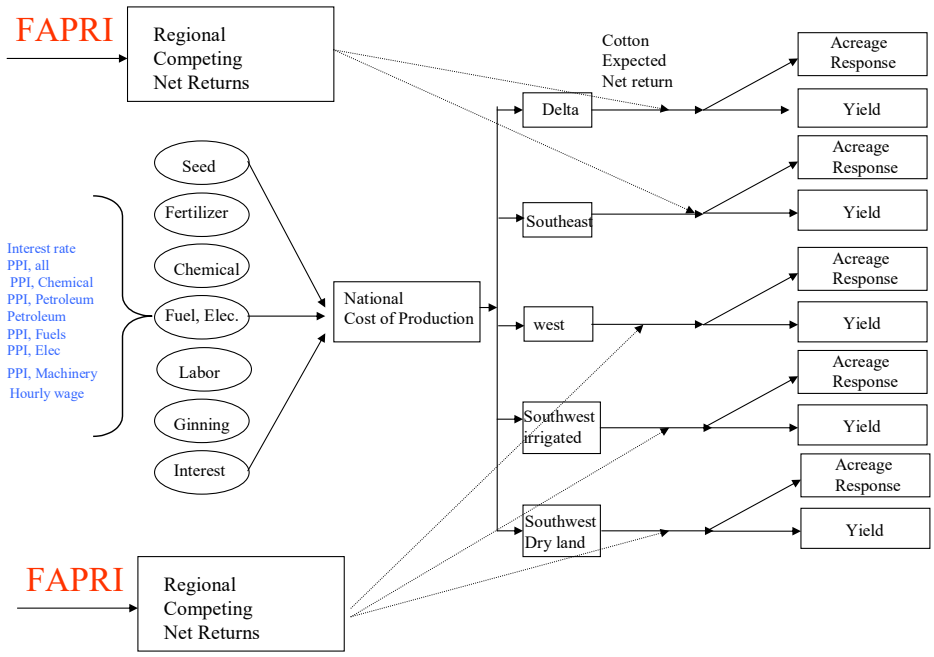


Figure 3.2. U.S. Man-Made Fiber Model

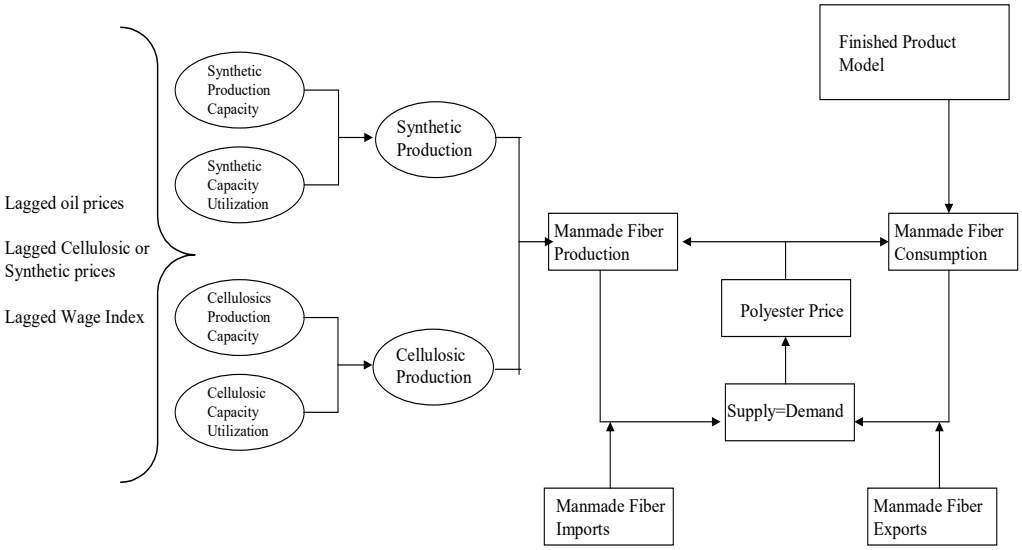
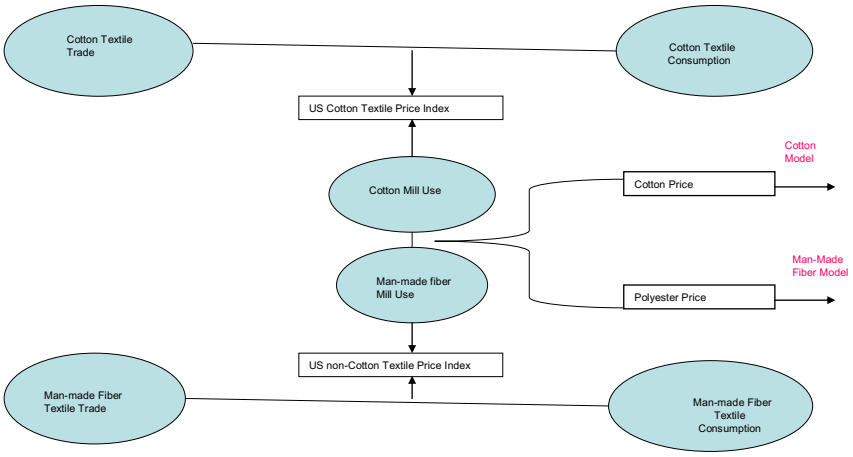


Figure 3.3. US Cotton and Non-cotton Textile Model



Appendix
Major Components of U.S. Cotton Programs

Direct Payments

Under the 2002 Farm Act, farmers and eligible landowners receive annual fixed payments. The amount of the direct payment is equal to the product of the payment rate, payment acres, and payment yield. The 2002 Farm Act sets the payment rate for upland cotton at 6.67 cents per pound for crop years 2002-2007. Payment acreage is set at 85% of base acreage. Payment yields for direct payments remain at levels specified by the 1996 Farm Act.

Counter-Cyclical Payments

Counter-cyclical income support payments (CCP) were developed to provide a counter-cyclical income safety net to replace most ad hoc market loan assistant payments that were provided to farmers during 1998-2001. Payments are based on historical production and are not tied to current production. CCP are available for covered commodities whenever the effective price is less than the target price. The payment amount is equal to the product of the payment rate, the payment acres (85% of base acres), and the payment yield. Counter-cyclical payments are available to contract holders whenever a program crop's target price is greater than the effective price. The effective price is equal to the sum of 1) the higher of the national average farm price for the marketing year, or the national loan rate for the commodity and 2) the direct payment rate for the commodity. The payment amount for a farmer is the product of the payment rate, the payment acres, and the payment yield. The upland cotton target price is 72.4 cents per pound for the duration of the farm bill. The payment for an individual cotton farmer is determined as

$$\text{Payment rate}_{\text{cotton}} = (\text{target price})_{\text{cotton}} - (\text{direct payment rate})_{\text{cotton}} - (\text{higher of commodity price or loan rate})_{\text{cotton}}$$

$$CCP_{cotton} = ([Base\ acres]_{cotton} \times 0.85) \times (payment\ yield)_{cotton} \times (payment\ rate)_{cotton}$$

Marketing assistance loan and LDP programs

The Farm Service Agency (FSA) administers commodity loan programs with marketing loan provisions for upland cotton through the Commodity Credit Corporation (CCC). CCC loan programs allow producers of designated crops to receive a loan from the government at a commodity-specific loan rate per unit of production by pledging production as loan collateral. After harvest, a farmer may obtain a loan for all or part of the new production. These loans may be repaid in three ways: at the loan rate plus interest costs (CCC interest cost of borrowing from the U.S. Treasury plus 1%); by forfeiting the pledged crop to the CCC at loan maturity; or at the alternative loan repayment rate. The marketing loan rate for upland cotton is 52 cents per pound for 2002-2007.

Step 2 payments

Step 2 payments, sometimes referred to as the "user marketing certificate program," are made to U.S. cotton users and exporters when U.S. prices are higher than world prices. They are intended to bridge the price gap and keep U.S. cotton competitive. Step 2 payments are issued to exporters and domestic mill users of upland cotton in a week following a consecutive 4-week period when the lowest U.S.-Northern Europe price quotation exceeds the Northern Europe price quotation by more than 1.25 cents per pound, and the AWP does not exceed 134% of the U.S. loan rate. Payments are made in cash or certificates to domestic users on documented raw cotton consumption, and to exporters on documented export shipments, at a payment rate equal to the difference between the U.S.-Northern Europe price and the Northern Europe price during the fourth week of the period, minus 1.25 cents per pound (the threshold). The 2002 Farm Act delayed the 1.25-cent threshold until August 1, 2006. Consequently, Step 2 payment calculations for the 2002-2005 marketing years are based on the difference between the U.S.-Northern

Europe price and the Northern Europe price. Step 2 has been cancelled due to the WTO brazil rule.

CHAPTER 4

CHINA MODEL

China is the largest producer and consumer of cotton in the world. Historically, cotton acreage in China has been dictated by government programs on production and marketing. Over the years, Chinese policies have transformed from state monopoly in government procurement and marketing to more market oriented policies. Fang and Babcock (2003) divided the Chinese cotton programs into three stages. The first stage (1954-85) included a state-controlled united procurement marketing system where farmers had no freedom to sell their produce in the free market. During the second stage (1985-99), a contract system was used where farmers are expected to sign delivery contracts with the state agency on the basis of mutual consultation. This system provided some freedom for farmers to make production and market decisions. During the period 1999 to 2001, significant policies reforms consistent with increased market orientations were witnessed.

On the demand side, fiber utilization at the mill level has more than doubled in the last decade due to rapid growth in the textile industry with textile output expanding from 860 thousand metric tons to more than 1,700 thousand metric tons. Slow growth in domestic production combined with the use of Tariff-rate-quota for cotton imports as part of Chinese WTO commitments has led to resulted in rapid increase in cotton imports in recent years. Currently, China accounted for approximately 23 percent of the world trade.

Model Structure

Cotton production is defined as the product of acreage and yield. Area sown to cotton is modeled in a two-stage framework. The first stage determines gross cropping area. The second stage uses economic variables (expected net return) to determine cropping patterns (area

allocation) for cotton and major substitute crops. Similar to the U.S. model, Chinese cotton production is estimated in a regional framework. Cotton-producing areas in China are segregated into four regions: the Xinjiang, the Yellow River valley, the Yangtze River valley, and the-rest-of-China. In the Xinjiang region, wheat and corn are included in the acreage equation as the competing crops whereas in the Yellow River valley, corn and soybean are included as the competing crops. Both in the Yangtze River valley and the rest-of-China, rice is included as the competing crop for cotton.

After two decades of rapid development, China has emerged as the world's largest producer of man-made fibers. Since 1997, consumption of chemical fiber has grown rapidly and has overtaken that of cotton. The share of cotton in total yarn production has declined from 86 percent in 1982 to about 40 percent in recent years. Following the general structure, fiber mill use is determined in two steps. In the first step, per capital textile consumption of fiber equivalent is determined by textile output price and per capita income. Following this, fiber share is determined by relative prices based on the Almost Ideal Demand System structure (AIDs, Deaton, 1980).

On the trade front, tariff-rate-quota on cotton imports is imposed. As part of the commitments, in-quota tariff on cotton imports is 1 percent; the out-of-quota tariff will decrease in the next five years: 76 percent in 2002, 67 percent in 2003, 58 percent in 2004, 49 percent in 2005, and 40 percent in 2006. The level of Quota is also different: 7,400,000 metric ton in 2002, 7,800,000 in 2003, 8,200,000 metric ton in 2003, 8,600,000 metric ton in 2004, and 8,900,000 metric ton in 2004 (FAS, 2002). The presence of a TRQ makes the Chinese import demand discontinuous at the quota level.

Chinese Cotton Model

4.1. Price Linkage Equations

4.1.1. World to Domestic Rice Price

LRIPRTCN = CCN10 + CCN11*LOG(RCNAVUS*XRNUSCN) +
CCN12*LOG(LAG(RIPRTCN))

Parameters	Estimates	Standard Error
CCN10	0.56	1.363
CCN11	0.09	0.086
CCN12	0.88	0.206
Adj. R-Square	0.433	
D-W	1.870	
Period of Fit	1979-2004	

4.1.2. World to Domestic Soybean Price

LSBPRTCN = CCN20+CCN21*LOG(SBNAVUS*XRNUSCN)
+CCN22*LOG(LAG(SBPRTCN))

Parameters	Estimates	Standard Error
CCN20	0.70	1.910
CCN21	0.02	0.153
CCN22	0.92	0.210
Adj. R-Square	0.311	
D-W	2.099	
Period of Fit	1979-2004	

4.1.3. Cotton Market Price to Procurement price

LCTPRTCN = CCN30+CCN31*LOG(CTPCUCN)+CCN32*SHIFT97

Parameters	Estimates	Standard Error
CCN30	-0.29	1.307
CCN31	1.04	0.139
CCN32	-0.12	0.070
Adj. R-Square	0.814	
D-W	1.865	
Period of Fit	1979-2004	

4.1.4. World to Domestic Polyester Price

LPLPRTCN = CCN40+CCN41*LOG(USSSPC*XRNUSCN)

Parameters	Estimates	Standard Error
CCN40	6.40	1.120
CCN41	0.52	0.179
Adj. R-Square	0.808	
D-W	1.853	
Period of Fit	1979-2004	

4.2. Cotton Production

4.2.1. Cotton Acreage in Xinjiang Region

LCTANWCN = CCN50 + CCN51*LOG(LAG(CTPRTCN/CIPRTCN)) +
CCN52*LOG(LAG(CTANWCN))+CCN53*D79-82+CCN54*D86-93

Parameters	Estimates	Standard Error
CCN50	-0.56	0.25
CCN51	0.19	0.05
CCN52	1.01	0.07
CCN53	0.12	0.10
CCN54	0.10	0.05
Adj. R-Square	0.949	
D-W	2.261	
Period of Fit	1979-2004	

4.2.2. Cotton Acreage in Yangtze River Region

LCTAYLCN = CCN60 + CCN61*LOG(LAG(CTPRTCN/(0.5*(SBPRTCN+CIPRTCN)))) +
CCN62*LOG(LAG(CTAYLCN)) +CCN63*D79-82+CCN64*D86-93

Parameters	Estimates	Standard Error
CCN60	1.60	1.13
CCN61	0.21	0.12
CCN62	0.74	0.149
CCN63	0.20	0.08
CCN64	0.15	0.06
Adj. R-Square	0.715	
D-W	1.412	
Period of Fit	1979-2004	

4.2.3. Cotton Acreage in Yellow River Region

LCTAYZCN = CCN70 + CCN71*LOG(LAG(CTPRTCN/RIPRTCN)) +
CCN72*LOG(LAG(CTAYZCN)) +CCN73*D79-82+CCN74*D86-93

Parameters	Estimates	Standard Error
CCN70	2.26	1.54
CCN71	0.25	0.17
CCN72	0.62	0.16
CCN73	0.05	0.12
CCN74	0.10	0.11
Adj. R-Square	0.675	
D-W	1.831	
Period of Fit	1979-2004	

4.2.4. Cotton Acreage in Other Regions

LCTAOTCN = CCN80 + CCN81*LOG(LAG(CTPRTCN/(**0.5***(SBPRTCN+CIPRTCN)))) +
CCN82*LOG(LAG(CTAOTCN))

Parameters	Estimates	Standard Error
CCN80	-0.95	0.714
CCN81	1.09	0.60
CCN82	0.77	0.110
CCN83	-0.11	0.16
CCN84	0.01	0.35
Adj. R-Square	0.838	
D-W	1.591	
Period of Fit	1979-2004	

4.2.5. Total Cotton Acreage

CTAHAICN = CTANWCN + CTAYLCN + CTAYZCN + CTAOTCN

4.2.6. Xinjiang Cotton Yield

CTYNWCN = CCN100 + CCN101*(LAG(CTPRTCN/CIPRTCN))
+ CCN102*(TREND)

Parameters	Estimates	Standard Error
CCN100	-0.80	0.27
CCN101	0.52	0.04
CCN102	0.20	0.03
Adj. R-Square	0.149	
D-W	1.632	
Period of Fit	1979-2004	

4.2..7. Yangtze River Cotton Yield

CTYYLCN = CCN110 + CCN111*(LAG(CTPRTCN/(0.5*(SBPRTCN+CIPRTCN))))
+ CCN112*(TRENDCN-18)

Parameters	Estimates	Standard Error
CCN110	0.28	0.27
CCN111	0.17	0.10
CCN112	0.03	0.04
Adj. R-Square	0.790	
D-W	1.326	
Period of Fit	1979-2004	

4.2.8. Yellow River Cotton Yield

CTYYZCN = CCN120 + CCN121*(LAG(CTPRTCN/RIPRTCN))
+ CCN122*(TRENDCN-18)

Parameters	Estimates	Standard Error
CCN120	0.45	0.17
CCN121	0.16	0.03
CCN122	0.02	0.06
Adj. R-Square	0.690	
D-W	1.454	
Period of Fit	1979-2004	

4.2.9. Other Regions Cotton Yield

CTYOTCN = CCN130 + CCN131*(TRENDCN-**18**) + CCN132*D94

Parameters	Estimates	Standard Error
CCN130	0.61	0.08
CCN131	0.009	0.005
CCN132	-0.33	0.16
Adj. R-Square	0.353	
D-W	2.343	
Period of Fit	1979-2004	

4.2.10. Total Cotton Production

CTPPRICN = CTANWCN*CTYNWCN + CTAYLCN*CTYYLCN + CTAYZCN*CTYYZCN
+CTAOTCN*CTYOTCN

4.3. Man-made Fiber Production

4.3.1. Cellulosic Production Capacity

LCLCPCN = CCN260 +CCN262*ln(**0.2***(LAG3(AOILP*XRNUSCN/GDDNCCN)
+ LAG4(AOILP*XRNUSCN/GDDNCCN)+ LAG5(AOILP*XRNUSCN/GDDNCCN)
+ LAG6(AOILP*XRNUSCN/GDDNCCN)+ LAG7(AOILP*XRNUSCN/GDDNCCN)))
+ CCN264*ln(**0.2***(LAG3(USRSPC*XRNUSCN/GDDNCCN)+
LAG4(USRSPC*XRNUSCN/GDDNCCN)
+ LAG5(USRSPC*XRNUSCN/GDDNCCN)+ LAG6(USRSPC*XRNUSCN/GDDNCCN)
+ LAG7(USRSPC*XRNUSCN/GDDNCCN))) +CCN265*LAG(CLCPCN)

Parameters	Estimates	Standard Error
CCN260	-1784.88	145.844
CCN262	-25.96	10.257
CCN264	40.62	18.403
CCN265	362.61	115.23
Adj. R-Square	0.951	
D-W	1.882	
Period of Fit	1979-2004	

4.3.2. Cellulosic Capacity Utilization

LCLUPCN = CCN270 + CCN271*(PLPRTCN)
+ CCN272*LOG(LAG(CLUPCN))+CCN273*/(AOILP*XRNUSCN)

Parameters	Estimates	Standard Error
CCN270	-2.67	0.21
CCN271	0.26	0.11
CCN272	4.28	1.15
CCN273	-0.20	0.05
Adj. R-Square	0.786	
D-W	1.837	
Period of Fit	1979-2004	

4.3.3. Cellulosic Production
CLPRCN = CLUPCN*CLCPCN

4.3.4. Synthetic Production Capacity

LSNCPCN = CCN290 +CCN291*(**0.2***(LAG3(AOILP*XRNUSCN/GDDNCCN)
+ LAG4(AOILP*XRNUSCN/GDDNCCN)+ LAG5(AOILP*XRNUSCN/GDDNCCN)
+ LAG6(AOILP*XRNUSCN/GDDNCCN)+ LAG7(AOILP*XRNUSCN/GDDNCCN)))
+ CCN292*(**0.2***(LAG3(PLPRTCN/GDDNCCN)+ LAG4(PLPRTCN/GDDNCCN)
+ LAG5(PLPRTCN/GDDNCCN)+ LAG6(PLPRTCN/GDDNCCN)

+
LAG7(PLPRTCN/GDDNCCN)))+CCN293*LAG(SNCPCN)+CCN294*d88+CCN295*d91+CC
N296*d99

Parameters	Estimates	Standard Error
CCN290	-1853.54	563.44
CCN291	-1509.78	342.55
CCN292	20.31	8.32
CCN293	1.25	0.45
CCN294	1155.22	336.47
CCN295	4579.47	775.33
Adj. R-Square	0.885	
D-W	1.920	
Period of Fit	1979-2004	

4.3.5. Synthetic Capacity Utilization

LSNUPCN = CCN300 + CCN301* USRSPC/AOILP
+CCN303*LAG(SNUPCN)+CCN304*d96+CCN305*d97

Parameters	Estimates	Standard Error
CCN300	-1.76	0.273
CCN301	0.001	0.001
CCN303	3.97	1.28
CCN304	1.85	0.55
CCN305	2.40	0.48
Adj. R-Square	0.77	
D-W	1.563	
Period of Fit	1979-2004	

4.3.6. Synthetic Production

SNPRCN =SNUPCN*SNCPCN

4.4. Fiber mill use

4.4.1. Per Capita Textile Consumption (in fiber equivalent)

PFBUPCCN = CCN330 +CCN331*Apparel Price Index + CCN332*Food Price Index+
CCN333*(GDRNCCN/NNATTCN)

Parameters	Estimates	Standard Error

CCN330	2.28	0.55
CCN331	-0.05	0.02
CCN332	-0.10	0.05
CCN333	0.71	0.05
Adj. R-Square	0.96	
D-W	1.561	
Period of Fit	1979-2004	

4.4.2 Textile Net Trade (in fiber equivalent)

TXFBECN=CCN340+CCN341*log(TXPIDCn/(APOUTPUs*XRNUSCN))
+CCN342*log(TRENDCn-19)-log(TXFBECn);

Parameters	Estimates	Standard Error
CCN340	6.29	0.07
CCN341	-0.16	0.06
CCN342	0.55	0.15
Adj. R-Square	0.95	
D-W	1.90	
Period of Fit	1979-2004	

4.4.3. Share of Cotton Mill Use and Share of Wool Mill Use

LCTFSHCN
=CCN160+cCCN160+CCN161*log((CTPRTCn/2204.622+CTSSIAUs*XRNUSCN)/GDDNCcn)+(-CCN162-CCN161)*log(PLPRTCN/GDDNCcn)
+CCN163*log((GWLPAu*XRNUSCN/XRNUSAu)/GDDNCcn)
+CCN164*(log(FBUPCCn*(lag(CTFSHCn)*(CTPRTCn)
+lag(WLCSCn)*(GWLPAu*XRNUSCN/XRNUSAu)+lag(1-WLCSCn-CTFSHCn)*(PLPRTCN))));

LWLFSHCN=ccn370
+CCN162*log((CTPRTCn/2204.622+CTSSIAUs*XRNUSCN)/GDDNCcn)
+(-CCN162-CCN372)*log(PLPRTCN/GDDNCcn)
+CCN372*log((GWLPAu*XRNUSCN/XRNUSAu)/GDDNCcn)
+CCN374*(log(FBUPCCn*(lag(CTFSHCn)*(CTPRTCn)
+lag(WLCSCn)*(GWLPAu*XRNUSCN/XRNUSAu)+lag(1-WLCSCn-CTFSHCn)*(PLPRTCN))));

Parameters	Estimates	Standard Error
CCN160	1.11	0.17
CCN161	-0.14	0.05
CCN162	0.15	0.06
CCN163	0.01	0.08
CCN164	-0.10	0.03

CCN370	-1.59	0.28
CCN372	-0.03	0.01
CCN374	0.02	0.14
Adj. R-Square		
D-W	1.55	
Period of Fit	1979-2004	

4.4.4. Cotton Mill Use

CTUMCN = CTFSHCN*FBUPCCN

4.5. Cotton Trade and Ending Stock

4.5.1. Cotton Exports

LCTEXTCN = CCN191 + CCN192*(2204.622*CTAHAUS/100*XRNUSCN/CTPRTCN)
+ CCN194*(LAG(CTUMCN/ CTPPRICN))

Parameters	Estimates	Standard Error
CCN191	-141.99	9.60
CCN192	207.68	78.6
CCN194	0.66	0.218
Adj. R-Square	0.865	
D-W	1.200	
Period of Fit	1979-2004	

4.5.2. Cotton Imports

If CTIMTCn-CTDQICN3<=0 then
CTIMTCn=ccn180+ccn181*(CTAHAUs/100*XRNUSCn/CTPRTCn*(1+CTDQICN1/100))
+ccn182*(GDRNCCN/NNATTCN)+ccn183*(TRENDCN);
else
CTIMTCn= (ccn180+ (CTDQICN1- CTDQICN2)*CTAHAUs/100*XRNUSCn)
+ccn181*(CTAHAUs/100*XRNUSCn/CTPRTCn*(1+CTDQICN2/100))
+ccn182*(GDRNCCN/NNATTCN)+ccn183*(TRENDCN);

Parameters	Estimates	Standard Error
CCN180	407.65	445.70
CCN181	-210457	1123.5
CCN182	73.65	16.52
CCN183	0.54	0.23
Adj. R-Square	0.87	
D-W	1.87	
Period of Fit	1979-2004	

4.5.3. Ending stock

CTCESCN = CCN200 + CCN201*(CTPPRICN + LAG(CTCESCN)) +
CCN202*(CTPRTCN/GDDNCCN)+CCN203*D96

Parameters	Estimates	Standard Error
CCN200	-1080.29	274.56
CCN201	0.64	0.173
CCN223	1286.40	240.02
CCN202	-10.66	0.128
Adj. R-Square	0.997	
D-W	1.960	
Period of Fit	1979-2004	

4.5.4. Market Clearing Identity
CTIMTCN+CTPPRICN+LAG(CTCESCN) = CTCESCN + CTUMCN + CTEXTCN

CHAPTER 5
INDIA MODEL

India has the largest cotton area in the world but ranks third in production due to lower yield. However, strong growth in the textile production has elevated India as the second largest user of cotton in the world. Fiber mill utilization including cotton got a boost in the early 90s due to economic liberalizations that increased textile exports. Overall, production growth has been able to meet demand keeping India relatively self sufficient in cotton production with occasional imports in the years of production shortfall.

Model Structure

Model structure for India is similar to China. Cotton supply response is estimated in a regional framework and is broadly divided into three regions.: northern (Haryana, Punjab, Rajasthan), western (Maharastra, Gujarat, Madhya Pradesh), and southern (Karnataka,Tamil Nadu, Andhra Pradesh). All the regional acreage and yield equations are dependent on expected cotton and competing crop prices. Wheat competes for land with cotton in northern region and sugarcane in the western region. In the southern region, both wheat and sugarcane competes with cotton for land. Demand side is modeled following the general structure. Unlike the United States and China, cotton domestic price is not endogenously solved in the model but linked to the world representative price (A-index price).

5.1. Price Linkage Equations

5.1.1. World to Domestic Sugarcane price

LSJPPSIN = CIN10+CIN11*LOG(LAG(SJPPSIN)) + CIN13*LOG(SGPRWD/**100***XRNUSIN)

Parameters	Estimates	Standard Error
CIN10	0.57	0.128
CIN11	0.80	0.036
CIN13	0.22	0.034
Adj. R-Square	0.978	
D-W	0.966	
Period of Fit	1970-2004	

5.1.2. World to Domestic Polyester price

LPPLRTIN = CIN20+CIN21*LOG(USSSPC*XRNUSIN)
+ CIN22*LOG(LAG(PPLRTIN))

Parameters	Estimates	Standard Error
CIN20	1.00	0.801
CIN21	0.134	0.106
CIN22	0.52	0.182
Adj. R-Square	0.645	
D-W	2.144	
Period of Fit	1970-2004	

5.1.3. World to Cotton Support price

LCTPPSIN = CIN210+CIN211*LOG(CTAHAUS*XRNUSIN)

Parameters	Estimates	Standard Error
CIN210	0.31	1.630
CIN211	0.87	0.205
Adj. R-Square	0.826	
D-W	1.330	
Period of Fit	1970-2004	

5.1.4. Cotton Support to Market Price

LCTPPDIN = CIN30+CIN31*LOG(CTPPSIN)

Parameters	Estimates	Standard Error
CIN30	-3.72	0.725
CIN31	1.07	0.097
Adj. R-Square	0.806	
D-W	1.395	

Period of Fit	1970-2004

5.2. Supply Response

5.2.1. Northern Cotton Acreage

CTAI1IN = CIN40+CIN41*(LAG(CTPPDIN/WHPPSIN))+CIN42*(LAG(CTAI1IN))

Parameters	Estimates	Standard Error
CIN40	124.39	36.900
CIN41	1489.89	200.032
CIN42	0.83	0.166
Adj. R-Square	0.652	
D-W	1.740	
Period of Fit	1970-2004	

5.2.2. Western Cotton Acreage

CTAI2IN =CIN50+CIN51*(LAG(CTPPDIN/SJPPSIN))+CIN52*(LAG(CTAI2IN))

Parameters	Estimates	Standard Error
CIN50	429.44	216.300
CIN51	306.26	150.50
CIN52	0.85	0.079
Adj. R-Square	0.848	
D-W	2.046	
Period of Fit	1970-2004	

5.2.3. Southern Cotton Acreage

CTAI3IN =CIN60+CIN61*(LAG(CTPPDIN/(**0.5***(WHPPSIN+SJPPSIN))))
+CIN62*(LAG(CTAI3IN))

Parameters	Estimates	Standard Error
CIN60	923.83	395.200
CIN61	493.26	120.55
CIN62	0.38	0.208
Adj. R-Square	0.849	
D-W	1.687	
Period of Fit	1970-2004	

5.2.4. Other Cotton Acreage

CTAI4IN =CIN70+CIN71*(LAG(CTAI4IN))

Parameters	Estimates	Standard Error
CIN70	37.59	16.82
CIN71	0.43	0.11
Adj. R-Square	0.835	
D-W	1.752	
Period of Fit	1970-2004	

5.2.5. Total Cotton Acreage

CTAHAIN =CTAI1IN+CTAI2IN+CTAI3IN+CTAI4IN

5.2.6. Northern Cotton Yield

CTYD1IN =CIN90+CIN91*(TRENDCN-**10**) + CIN92*(LAG(CTPPDIN/WHPPSIN))

Parameters	Estimates	Standard Error
CIN90	-0.32	0.109
CIN91	0.004	0.002
CIN92	0.068	0.034
Adj. R-Square	0.818	
D-W	1.812	
Period of Fit	1970-2004	

5.2.7. Western Cotton Yield

CTYD2IN =CIN100+CIN102*(TRENDCN-**10**) + CIN103*(LAG(CTPPDIN/SJPPSIN))

Parameters	Estimates	Standard Error
CIN100	-0.72	0.012
CIN102	0.005	0.001
CIN103	0.043	0.012
Adj. R-Square	0.851	
D-W	1.581	
Period of Fit	1970-2004	

5.2.8. Southern Cotton Yield

CTYD3IN =CIN110+CIN111*(TRENDCN-
10)+CIN112*(LAG(CTPPDIN/(0.5*(WHPPSIN+SJPPSIN))))
+CIN113*(D74+D00)

Parameters	Estimates	Standard Error
CIN110	-0.45	0.085
CIN111	0.004	0.002
CIN112	-0.044	0.027
CIN113	0.054	0.017

Adj. R-Square	0.769
D-W	0.803
Period of Fit	1970-2004

5.2.9. Other Cotton Yield

CTYD4IN =CIN120 + CIN121*(RNWRIIN) + CIN122*(TRENDCN)
+CIN124*D95

Parameters	Estimates	Standard Error
CIN120	18.31	1.868
CIN121	-0.017	0.002
CIN122	0.016	0.002
CIN124	-0.034	0.059
Adj. R-Square	0.356	
D-W	0.854	
Period of Fit	1970-2004	

5.2.10. Regional Cotton Production
CTPD1IN =CTAI1IN*CTYD1IN
CTPD2IN =CTAI2IN*CTYD2IN
CTPD3IN =CTAI3IN*CTYD3IN
CTPD4IN =CTAI4IN*CTYD4IN

5.2.11. Total Cotton Production
CTPPRIN =CTPD1IN+CTPD2IN+CTPD3IN+CTPD4IN

5.3. Man-made Fiber Supply
5.3.1. Man-made fibers Production capacity

LMMFCPIN = CIN220+ CIN221*(**0.5***(LAG(AOILP*XRNUSIN/GDDNCIN)
+LAG2(AOILP*XRNUSIN/GDDNCIN))) +
CIN222*(**0.2***(LAG3(AOILP*XRNUSIN/GDDNCIN)+ LAG4(AOILP*XRNUSIN/GDDNCIN)
+LAG5(AOILP*XRNUSIN/GDDNCIN) +LAG6(AOILP*XRNUSIN/GDDNCIN)
+LAG7(AOILP*XRNUSIN/GDDNCIN)))
+CIN223*(**0.5***(LAG(USSSPC*XRNUSIN/GDDNCIN)
+LAG2(USSSPC*XRNUSIN/GDDNCIN)))+
CIN224*(**0.2***(LAG3(USSSPC*XRNUSIN/GDDNCIN)
+LAG4(USSSPC*XRNUSIN/GDDNCIN) +LAG5(USSSPC*XRNUSIN/GDDNCIN)
+LAG6(USSSPC*XRNUSIN/GDDNCIN) +LAG7(USSSPC*XRNUSIN/GDDNCIN)))

Parameters	Estimates	Standard Error
CIN220	1450.34	279.655
CIN221	-0.013	0.244
CIN222	-0.143	0.075
CIN223	0.260	0.220

CIN224	0.368	0.537
Adj. R-Square	0.865	
D-W	2.047	
Period of Fit	1983-2004	

5.3.2 Man-made Fiber Capacity utilization

LMMFUPIN = CIN230+CIN231*
(USSSPC*XRNUSIN/GDDNCIN) +
CIN232*(AOILP*XRNUSIN/GDDNCIN)+CIN233*LAG(MMFUPI)+CIN234*TRENDCn

Parameters	Estimates	Standard Error
CIN230	-0.48	0.044
CIN231	0.033	0.019
CIN232	-0.06	0.014
Adj. R-Square	0.71	
D-W	1.713	
Period of Fit	1983-2004	

5.3.3. Man-made fiber production

MMFPRIN =MMFUPIN*MMFCPIN

5.4. Fiber Consumption

5.4.1. Per Capita Textile Consumption in Fiber Equivalent

PFBPPNIN = CIN150 + CIN151*(GDRNCIN/NNATTIN)
+ CIN152*(LAG(CTFSHIN)/GDDNCIN*CTPPDIN+(**1**-
LAG(CTFSHIN))*PPLRTIN/GDDNCIN)+CIN153*LAG(PFBPPNIN)
+ CIN154*D70+CIN155*D81+CIN156*D90+CIN157*D95

Parameters	Estimates	Standard Error
CIN150	0.36	0.243
CIN151	0.04	0.007
CIN152	-0.27	0.137
CIN153	0.80	0.134
CIN154	1.04	0.25
CIN155	-0.14	0.11
CIN156	0.029	0.11
CIN157	0.18	0.13
Adj. R-Square	0.829	
D-W	1.686	
Period of Fit	1970-2004	

5.4.2. Cotton Share in Fiber Mill Use

LCTFSHIN =CIN160+CIN161*((CTPPDIN/22.04622+CTSSIAUs*XRNUSIN)/PPLRTIN)
+CIN162*(lag(CTFSHIN))+CIN163*bshift81

Parameters	Estimates	Standard Error
CIN160	0.20	0.159
CIN161	-13.98	2.045
CIN162	1.72	0.144
CIN163	0.060	0.012
Adj. R-Square	0.677	
D-W	2.992	
Period of Fit	1970-2004	

5.4.3. Total cotton mill use

CTUMIIN =CTFSHIN*FBPPNIN

5.5. Ending stock and Trade Equations

5.5.1. Cotton Ending Stock

LCTCESIN = CIN140 + CIN141*LOG(CTAHAUS*XRNUSIN/GDDNCIN)
+ CIN142*LOG(CTPPRIN+LAG(CTCESIN))

Parameters	Estimates	Standard Error
CIN140	0.605	2.408
CIN141	-0.197	0.125
CIN142	0.835	0.274
Adj. R-Square	0.742	
D-W	1.860	
Period of Fit	1970-2004	

5.5.2. Cotton Imports

LCTIMTIN = CIN180+CIN182*shift92
+CIN181*(CTAHAUS*XRNUSIN/CTPPDIN)
+CIN183*d95+CIN184*D99+CIN185*LAG(CTIMTIN)

Parameters	Estimates	Standard Error
CIN180	82.80	23.670
CIN181	-137.91	33.789
CIN182	49.41	15.994
CIN183	-114.61	45.667
CIN184	216.19	110.32
CIN185	0.67	0.15
Adj. R-Square	0.720	

D-W	1.819
Period of Fit	1970-2004

5.5.3. Cotton Exports

CTIMTIN =-CTPPRIN+CTEXTIN-LAG(CTCESIN)+CTCESIN+ CTUMIIN

CHAPTER 6
Australian Fiber Model

In the last decade, Australia has become an important player in the world cotton market. Since domestic demand for cotton is stagnant, most of the cotton produced in Australia is exported. Interestingly, cotton exports from Australia have been greater than domestic production in the last few years.

Model structure

6.1. Cotton Supply

6.1.1. *Cotton Acreage*

CTAHAAU = CAU10 + CAU11*(LAG(CTPDCAU/SHPFRAU***100**)) +
CAU12*(LAG(CTAHAAU))

Parameters	Estimates	Standard Error
CAU10	-52.63	40.14
CAU11	0.58	0.41
CAU12	0.91	0.16
Adj. R-Square	0.782	
D-W	2.096	
Period of Fit	1974-2004	

6.1.2. *Cotton Yield*

CTYHAAU = CAU20 + CAU21*(TRENDCN) + CAU22*(LAG(CTPDCAU/SHPFRAU))

Parameters	Estimates	Standard Error
CAU20	0.42	0.120
CAU21	0.03	0.002
CAU22	0.21	0.006
Adj. R-Square	0.834	
D-W	2.017	
Period of Fit	1970-2004	

6.1.3. *Cotton Production*

CTPPRAU = CTYHAAU*CTAHAAU

6.2. Man-made Fiber Supply

6.2.1. *Man-made Fiber Capacity*

LMMFCPAU = CAU110 + CAU111*(0.2*(LAG3(AOILP*XRNUSAU/GDDNCAU)
+ LAG4(AOILP*XRNUSAU/GDDNCAU)+ LAG5(AOILP*XRNUSAU/GDDNCAU)
+ LAG6(AOILP*XRNUSAU/GDDNCAU)+ LAG7(AOILP*XRNUSAU/GDDNCAU))) +

+ CAU112*(0.2*(LAG3(USSSPC*XRNUSAU/GDDNCAU)+
LAG4(USSSPC*XRNUSAU/GDDNCAU)
+ LAG5(USSSPC*XRNUSAU/GDDNCAU)+ LAG6(USSSPC*XRNUSAU/GDDNCAU)
+ LAG7(USSSPC*XRNUSAU/GDDNCAU)))

Parameters	Estimates	Standard Error
CAU110	-16.24	5.211
CAU111	-15.06	0.095
CAU112	36.20	0.137
Adj. R-Square	0.739	
D-W	1.876	
Period of Fit	1984-2004	

6.2.2. *Man-made Fiber Capacity Utilization*

LMMFUPAU = CAU120 + CAU121* (USSSPC*XRNUSAU/GDDNCAU)
+CAU122*(AOILP*XRNUSAU/GDDNCAU)+CAU123*LA(MMFUPAU)+CAU124*D95

Parameters	Estimates	Standard Error
CAU120	-1.31	0.12
CAU121	0.38	0.045
CAU122	-1.05	2.077
CAU123	2.67	1.05
CAU123	1.92	0.77
Adj. R-Square	0.930	
D-W	1.788	
Period of Fit	1984-2004	

6.2.3. *Man-made Fiber Production*

MMFPRAU = MMFUPAU*MMFCPAU

6.3. Fiber Mill Use
6.3.1. Per Capita Textile Consumption (in fiber equivalent)

PFBPPNAU = CAU40 + CAU41*(GDRNCAU/NNATTAU) + CAU43*D74

+ CAU42*(LAG(CTFSHAU)*CTPDCAU/GDDNCAU
+ (**1**-LAG(CTFSHAU))*USSSPC/**100***XRNUSAU/GDDNCAU);

Parameters	Estimates	Standard Error
CAU40	7.02	2.37
CAU41	0.04	0.01
CAU42	-0.93	0.41
CAU43	3.48	1.10
Adj. R-Square	0.753	
D-W	1.587	
Period of Fit	1970-2004	

6.3.2. Cotton Share in Fiber Mill Use

LCTFSHAU = CAU50 + CAU51*(CTPDCAU/(USSSPC*XRNUSAU)) +
CAU52*(LAG(CTFSHAU)) +CAU53*d73

Parameters	Estimates	Standard Error
CAU50	-1.79	0.121
CAU51	-0.05	0.01
CAU52	2.76	1.076
CAU53	1.08	0.22
Adj. R-Square	0.941	
D-W	1.875	
Period of Fit	1970-2004	

6.4. Trade and Ending Stock

6.4.1. *Cotton Ending Stock*

LCTCESAU = CAU70 + CAU71*LOG(CTAHAUS*XRNUSAU/GDDNCAU) +
CAU72*LOG(CTPPRAU + LAG(CTCESAU))+CAU73*d75+CAU76*d82;

Parameters	Estimates	Standard Error
CAU70	0.38	0.192
CAU71	-0.48	0.066
CAU72	0.78	0.059
CAU73	-0.49	0.22
CAU74	-0.55	0.15
Adj. R-Square	0.959	
D-W	2.066	
Period of Fit	1970-2004	

6.4.2. *Cotton Exports*

CTEXTAU = CTPPRAU + CTIMTAU + LAG(CTCESAU) – CTUMIAU – CTCESAU

CHAPTER 7
OTHER ASIAN FIBER MODELS

Apart from China, India and Australia, we have also developed separate country models for few other important Asian players such as Pakistan, Taiwan, Japan and South Korea. Other Asian countries are lumped together and modeled as Other Asia.

7.1. **Pakistan Model**

7.1.1. Price Linkage Equations

7.1.1.1. World to Domestic Rice Price

LRIPRIPK = CPK10+CPK11*log(LAG(RIPRIPK))+CPK12*log(RCNAVUS*XRNUSPK)

Parameters	Estimates	Standard Error
CPK10	0.98	0.19
CPK11	0.78	0.13
CPK12	0.18	0.05
Adj. R-Square	0.818	
D-W	2.099	
Period of Fit	1970-2004	

7.1.1.2. World to Domestic Sugar Cane Price

LSJPRIPK = CPK20+CPK21*LOG(LAG(SJPRIPK))+CPK22*LOG(SGPRWD*XRNUSPK) +CPK23*D00

Parameters	Estimates	Standard Error
CPK20	1.76	0.346
CPK21	0.54	0.048
CPK22	0.17	0.086
CPK23	0.64	0.074
Adj. R-Square	0.986	
D-W	2.031	
Period of Fit	1970-2004	

7.1.1.3. World to Domestic Cotton Price

LCTPRIPK = CPK130+CPK131*LOG(CTAHAUS*XRNUSPK)

Parameters	Estimates	Standard Error
CPK130	3.50	0.782
CPK131	0.54	0.096

Adj. R-Square	0.872
D-W	1.878
Period of Fit	1970-2004

7.1.2. Fiber Supply

7.1.2.1. Cotton Acreage

LCTAHAPK =CPK30+CPK31*(LAG(CTPRIPK/(0.5*(SJPRIPK+RIPRIPK))
100))+CPK32(LAG(CTAHAPK))+CPK33*D95+CPK34*d03

Parameters	Estimates	Standard Error
CPK30	132.80	62.15
CPK31	0.33	0.12
CPK32	0.95	0.19
CPK33	-259.98	100.55
CPK34	290.86	60.45
Adj. R-Square	0.793	
D-W	2.027	
Period of Fit	1970-2004	

7.1.2.2. Cotton Yield

CTYHAPK = CPK40+CPK41*(LAG(CTPRIPK/(0.5*(SJPRIPK+RIPRIPK))))
+CPK42*(TRENDCN-10)

Parameters	Estimates	Standard Error
CPK40	0.07	0.124
CPK41	0.11	0.002
CPK42	0.01	0.002
Adj. R-Square	0.752	
D-W	1.626	
Period of Fit	1970-2004	

7.1.2.3. Cotton Production

CTPPRPK = CTYHAPK*CTAHAPK

7.1.2.4. *Man-made Fiber Production Capacity*

LMMFCPPK = CPK140 + CPK141* (**0.2***(LAG3(AOILP*XRNUSPK
/GDDNCPK)+LAG4(AOILP*XRNUSPK/GDDNCPK)
+LAG5(AOILP*XRNUSPK/GDDNCPK)
+LAG6(AOILP*XRNUSPK/GDDNCPK) +LAG7(AOILP*XRNUSPK/GDDNCPK)))

+CPK142* (**0.2***(LAG3(USSSPC*XRNUSPK/GDDNCPK)
+LAG4(USSSPC*XRNUSPK/GDDNCPK) +LAG5(USSSPC*XRNUSPK/GDDNCPK)
+LAG6(USSSPC*XRNUSPK/GDDNCPK)+LAG7(USSSPC*XRNUSPK/GDDNCPK)))
+CPK143*LAG(MMFCPPK)

Parameters	Estimates	Standard Error
CPK140	131.12	111.890
CPK141	-18.82	5.47
CPK142	3.26	7.55
CPK143	0.86	0.15
Adj. R-Square	0.654	
D-W	1.605	
Period of Fit	1970-2004	

7.1.2.5. Man-made Fiber Capacity utilization

LMMFUPPK =
CPK150+CPK151*(USSSPC*XRNUSPK/GDDNCPK)+CPK153*TRENDCn+CPK154*(D90+
D91)

Parameters	Estimates	Standard Error
CPK150	-8.21	0.220
CPK151	-0.06	0.02
CPK153	0.22	0.12
CPK154	1.70	0.25
Adj. R-Square	0.767	
D-W	1.681	
Period of Fit	1985-2004	

7.1.2.6. Man-made Fiber Production

MMFPRPK = MMFUPPK*MMFCPPK

7.1.3. Fiber Mill Use
7.1.3.1. Per Capita Textile Consumption (in fiber equivalent)

PFBPPNPK = CPK60+
CPK61*(GDRNCPK/NNATTPK)+CPK62*(LAG(CTUMIPK/FBPPNPK)
*CTPRIPK/GDDNCPK+(1-LAG(CTUMIPK/FBPPNPK))*USSSPC*XRNUSPK/GDDNCPK)
+CPK63*LAG(PFBPPNPK)

Parameters	Estimates	Standard Error
CPK60	-0.53	1.655
CPK61	0.24	0.070
CPK62	-0.01	0.033
CPK63	0.81	0.231

Adj. R-Square	0.743
D-W	1.833
Period of Fit	1985-2004

7.1.3.2. Cotton share in Mill Use

LCTFSHPK = cpk70+CPK72*((CTPRIPK/**82.28**+CTSSIAUs*XRNUSPK)+
CPK73*(USSSPC*XRNUSPK/**100**))
+cpk71*LAG(CTFSHPK)

Parameters	Estimates	Standard Error
CPK70	-0.75	0.344
CPK71	-0.59	0.304
CPK72	0.01	0.004
CPK73	2.99	1.05
Adj. R-Square	0.853	
D-W	1.977	
Period of Fit	1970-2004	

7.1.3.3. Total Cotton Mill Use

CTUMIPK =FBPPNPK*CTFSHPK

7.1.3.4. Man-made fiber mill use

MFCPCPK = (1-CTFSHPK-WLCSPK)*FBPPNPK

7.1.4. Fiber Trade and Ending Stock

7.1.4.1. Cotton exports

LCTEXTPK = CPK100+CPK101*LOG(CTAHAUS*XRNUSPK/CTPRIPK)+CPK102*D97

Parameters	Estimates	Standard Error
CPK100	5.02	0.52
CPK101	0.81	0.48
CPK102	-0.68	0.21
Adj. R-Square	0.62	
D-W	1.78	
Period of Fit	1970-2004	

7.1.4. 2. Cotton Imports

CTIMTPK = CTCESPK - CTPPRPK+CTUMIPK+CTEXTPK-LAG(CTCESPK)

7.1.4.3. Cotton ending stock

LCTCESPK = CPK110+CPK111*(CTPPRPK+LAG(CTCESPK))+
CPK112*(CTPRIPK/GDDNCPK)+CPK113*D73+CPK114*D87+CPK115*D95

Parameters	Estimates	Standard Error
CPK110	-103.59	31.87
CPK111	0.28	0.140
CPK112	-0.28	0.10
CPK113	89.40	43.51
CPK114	-231.97	78.33
CPK115	-199.25	103.21
Adj. R-Square	0.72	
D-W	1.69	
Period of Fit	1970-2004	

7.2. Japan Model

7.2.1. Fiber mill use
7.2.1.1. Per Capita Textile Consumption (in fiber equivalent)

PFBCPCJP = CJP10+CJP11*(GDRNCJP/NNATTJP)+ CJP12*(TXPIDJp)+CJp13*TrendCn

Parameters	Estimates	Standard Error
CJP10	12.31	3.602
CJP11	0.005	0.0005
CJP12	-0.02	0.0003
CJP13	-0.27	0.12
Adj. R-Square	0.706	
D-W	1.713	
Period of Fit	1986-2004	

7.2.1.2. Textile Trade
FBTDJp=CJP110+**CJP111***log(TXPIDJp)+CJP112*(TRENDCn-**27**);

Parameters	Estimates	Standard Error
CJP110	683.07	103.60
CJP111	672.30	305.62
CJP112	116.24	68.55
Adj. R-Square	0.811	
D-W	1.458	
Period of Fit	1986-2004	

7.2.1.3. Cotton share in Fiber Mill Use

LCTFSHJP = CJP20 + CJP21*LOG(LAG(CTFSHJP))+
CJP22*LOG((CTAHAUS+CTSSIAUs*100)/USSSPC)+CJp24*D75+CJP25*D78

Parameters	Estimates	Standard Error
CJP20	0.81	0.115
CJP21	1.29	0.065
CJP22	-0.12	0.072
CJP24	0.56	0.093
CJp25	0.21	0.07
Adj. R-Square	0.965	
D-W	1.889	
Period of Fit	1986-2004	

7.2.1.4. Cotton mill use

CTUMJP =MFBCJP*CTFSHJP

7.2.1.5. Man-made fiber mill use

MFCPCJP = (**1**-CTFSHJP-WLCSJP)*FBCPCJP

7.2.2. Man-Made Fiber Supply

7.2.2.1. Man-Made Fiber Production capacity

LMMFCPJP = CJP60 + CJP61*
(**0.2***(LAG3(AOILP*XRNUSJP/GDDNCJP)+LAG4(AOILP*XRNUSJP/GDDNCJP)
+LAG5(AOILP*XRNUSJP/GDDNCJP) +LAG6(AOILP*XRNUSJP/GDDNCJP)
+LAG7(AOILP*XRNUSJP/GDDNCJP)))
+CJP62*(**0.2***(LAG3(USSSPC*XRNUSJP/GDDNCJP)
+LAG4(USSSPC*XRNUSJP/GDDNCJP) +LAG5(USSSPC*XRNUSJP/GDDNCJP)
+LAG6(USSSPC*XRNUSJP/GDDNCJP) +LAG7(USSSPC*XRNUSJP/GDDNCJP)))
+CJP63*bshift83

Parameters	Estimates	Standard Error
CJP60	1860.38	0.256
CJP61	-0.12	0.022
CJP62	1.48	0.016
CJP63	-160.47	0.044
Adj. R-Square	0.835	
D-W	1.951	
Period of Fit	1977-2004	

7.2.2.2. Man-Made Fiber Capacity Utilization

LMMFUPJP = CJP70+CJP71*

(USSSPC*XRNUSJP/GDDNCJP)+ CJP72*(AOILP*XRNUSJP/GDDNCJP)

Parameters	Estimates	Standard Error
CJP70	0.75	0.17
CJP71	0.006	0.002
CJP72	-0.006	0.002
Adj. R-Square	0.989	
D-W	2.057	
Period of Fit	1977-2004	

7.2.2.3. Man-made Fiber Production

MMFPRJP =MMFUPJP*MMFCPJP

7.2.3. Fiber Ending Stock and Trade

7.2.3.1. Cotton Ending Stock

LCTCESJP = CJP40 + CJP41*LOG(LAG(CTCESJP)) +
CJP42*LOG(CTAHAUS*XRNUSJP/GDDNCJP)+CJP43* D70

Parameters	Estimates	Standard Error
CJP40	70.92	0.621
CJP41	0.592	0.058
CJP42	-0.126	0.007
CJP43	75.85	0.089
Adj. R-Square	0.957	
D-W	1.692	
Period of Fit	1970-2004	

7.2.3.2. Cotton Imports

CTIMTJP = -LAG(CTCESJP)+CTCESJp+CTUMJP-CTPPRJP+CTEXTJP

7.3. South Korea

7.3.1. Fiber Mill Use

7.3.1.1. Per Capita Textile Consumption (in fiber equivalent)

PFBPPNKR = CSK40+CSK41*(GDRNCKR/NNATTKR)+
CSK42*(LAG(CTUMKR)/LAG(FBPPNKR)*CTAHAUS*XRNUSKR/GDDNCKR

+(**1**-
LAG(CTUMKR)/LAG(FBPPNKR))*STPPCKR/GDDNCKR)+CSK43*LAG(PFBPPNKR)

Parameters	Estimates	Standard Error
CSK40	1.13	0.71
CSK41	4.8e-05	0.0001
CSK42	-0.0016	0.0002
CSK43	0.95	0.073
Adj. R-Square	0.600	
D-W	1.862	
Period of Fit	1970-2004	

7.3.1.2. Cotton share in Mill Use
LCTFSHKR = CSK50 +
CSK51*((CTPSDKR+CTSSIAUs***100)**/STPPCKR)+CSK52*(LAG(CTFSHKR))

Parameters	Estimates	Standard Error
CSK50	-1.88	0.034
CSK51	-0.008	0.003
CSK52	3.66	1.23
Adj. R-Square	0.929	
D-W	1.872	
Period of Fit	1970-2004	

7.3.1.3. Cotton Mill Use

CTUMKR = CTFSHKR*FBPPNKR

7.3.1.4. Man-made Fiber Mill Use

MFCPCKR = (**1**-CTFSHKR-WLCSKR)*FBCPCKR

7.3.2. Man-made Fiber Supply

7.3.2.1. Man-made Fiber Production Capacity

LMMFCPKR = CSK90 + CSK91 *(**0.2***(LAG3(AOILP*XRNUSKR/GDDNCKR)
+LAG4(AOILP*XRNUSKR/GDDNCKR)
+LAG5(AOILP*XRNUSKR/GDDNCKR) +LAG6(AOILP*XRNUSKR/GDDNCKR)
+LAG7(AOILP*XRNUSKR/GDDNCKR)))
+CSK92 *(**0.2***(LAG3(USSSPC*XRNUSKR/GDDNCKR)
+LAG4(USSSPC*XRNUSKR/GDDNCKR)+LAG5(USSSPC*XRNUSKR/GDDNCKR)
+LAG6(USSSPC*XRNUSKR/GDDNCKR)+LAG7(USSSPC*XRNUSKR/GDDNCKR)))
+CSK93*LAG

Parameters	Estimates	Standard Error
CSK90	32.00	20.46
CSK91	-0.08	0.122
CSK92	0.05	0.087
CSK93	1.01	0.072
Adj. R-Square	0.584	
D-W	1.635	
Period of Fit	1979-2004	

7.3.2.2. Man-made Fiber Capacity Utilization

LMMFUPKR = CSK100 + CSK101*(USSSPC*XRNUSKR/GDDNCKR)+ CSK102*(AOILP*XRNUSKR/GDDNCKR)+CSK103*LAG(MMFUPKR)

Parameters	Estimates	Standard Error
CSK100	-7.88	0.293
CSK101	0.004	0.0040
CSK102	-0.006	0.001
CSK103	10.85	2.33
Adj. R-Square	0.870	
D-W	1.898	
Period of Fit	1979-2004	

7.3.2.3. Man-made fiber production

MMFPRKR =MMFUPKR*MMFCPKR

7.3.3. Fiber Ending Stock and Trade

7.3.3.1. Cotton Ending Stock

LCTCESKR =CSK70+CSK71*LOG(LAG(CTCESKR)+CTPPRKR) + CSK72*LOG(CTAHAUS*XRNUSKR/GDDNCKR)

Parameters	Estimates	Standard Error
CSK70	2.12	1.093
CSK71	0.828	0.188
CSK72	-0.188	0.193
Adj. R-Square	0.615	
D-W	1.818	
Period of Fit	1970-2004	

7.3.3.2. Cotton Imports

CTIMTKR = -LAG(CTCESKR)+CTCESKR+CTUMKR-CTPPRKR+CTEXTKR

7.4. Taiwan

7.4.1 Fiber Mill Use

7.4.1.1. Per Capita Textile Consumption (in fiber equivalent)

PFBCPCTW = CTW20 +
CTW21*(LAG(CTFSHTW)*CTAHAUS*XRNUSTW/GDDNCTW+(**1**-
LAG(CTFSHTW))*PLPRTTW/GDDNCTW)+ CTW22*(GDRNCTW/NNATTTW)

Parameters	Estimates	Standard Error
CTW20	66.61	14.887
CTW21	-56.55	11.07
CTW22	0.26	0.022
Adj. R-Square	0.809	
D-W	1.880	
Period of Fit	1980-2004	

7.4.1.2. Cotton share in Fiber Mill Use

LCTFSHTW = CTW30 + CTW31*((CTAHAUS+CTSSIAUs***100)**/USSSPC)+
CTW33*TRENDCn

Parameters	Estimates	Standard Error
CTW30	1.82	0.246
CTW31	-0.39	0.192
CTW33	-0.09	0.028
Adj. R-Square	0.868	
D-W	1.705	
Period of Fit	1980-2004	

7.4.1.3. Cotton Mill Use

CTUMTW = FBCPCTW*CTFSHTW

7.4.1.4. Man-made fiber mill use

MFCPCTW = (**1**-CTFSHTW-WLCSTW)*FBCPCTW

7.4.2. Man-made Fiber Supply

7.4.2.1 Man-made Fiber Production Capacity

LMMFCPTW = CTW70
+ CTW72*(**0.2***(LAG3(AOILP*XRNUSTW/GDDNCTW)
+LAG4(AOILP*XRNUSTW/GDDNCTW)
+LAG5(AOILP*XRNUSTW/GDDNCTW)

+LAG6(AOILP*XRNUSTW/GDDNCTW)
+LAG7(AOILP*XRNUSTW/GDDNCTW)))
+CTW74*(**0.2***(LAG3(USSSPC*XRNUSTW/GDDNCTW)
+LAG4(USSSPC*XRNUSTW/GDDNCTW)
+LAG5(USSSPC*XRNUSTW/GDDNCTW
+LAG6(USSSPC*XRNUSTW/GDDNCTW)
+LAG7(USSSPC*XRNUSTW/GDDNCTW)))

Parameters	Estimates	Standard Error
CTW70	2466.17	100.532
CTW72	-0.168	0.110
CTW74	0.396	0.113
Adj. R-Square	0.646	
D-W	1.840	
Period of Fit	1978-2004	

7.4.2.2 Man-made Fiber Capacity Utilization

LMMFUPTW = CTW80+CTW81*
(USSSPC*XRNUSTW/GDDNCTW)+
CTW82*(AOILP*XRNUSTW/GDDNCTW)+CTW83*LAG(MMFUPTW)

Parameters	Estimates	Standard Error
CTW80	-1.77	0.083
CTW81	0.38	0.164
CTW82	-0.88	0.141
CTW83	4.09	1.55
Adj. R-Square	0.925	
D-W	1.569	
Period of Fit	1978-2004	

7.4.2.3. Man-made Fiber Production

MMFPRTW = MMFUPTW*MMFCPTW

7.4.3. Fiber Ending Stock and Trade

7.4.3.1. Cotton Ending Stock

LCTCESTW = CTW50 + CTW51*LOG(CTAHAUS*XRNUSTW/GDDNCTW) +
CTW52*LOG(LAG(CTCESTW)+CTPPRITW)

Parameters	Estimates	Standard Error
CTW50	21.17	1.631
CTW51	-2.04	0.156

CTW52	0.79	0.209
Adj. R-Square	0.365	
D-W	1.674	
Period of Fit	1970-2004	

7.4.3.2. Cotton Imports

CTIMTTW = -LAG(CTCESTW)+CTCESTW+CTUMTW-CTPPRTW+CTEXTTW

7.5. Other Asia Model

Other Asia is the residual of total Asia minus China, India, Taiwan, Japan, South Korea, and Pakistan. The international cotton, polyester price and domestic prices are assumed to be perfect transmission.

7.5.1. Fiber Supply

7.5.1.1. Cotton Acreage

LCTAHAOA = COA10+COA11*LOG(LAG(CTAHAOA))+COA12*LOG(LAG(CTAHAUS/(**1**/**3***(WHPPSOA +CORNPOA+SOGHPOA))))

Parameters	Estimates	Standard Error
COA10	88.13	33.28
COA11	12.57	1.59
COA12	0.78	0.11
Adj. R-Square	0.945	
D-W	2.090	
Period of Fit	1970-2004	

7.5.1.2. Cotton Yield

CTYHAOA =COA20+COA21*(TRENDCN-**10**)

Parameters	Estimates	Standard Error
COA20	0.24	0.008
COA21	0.001	0.0003
Adj. R-Square	0.756	
D-W	1.752	
Period of Fit	1970-2004	

7.5.1.3. Total Production

CTPPROA =CTAHAOA*CTYHAOA

7.5.2. Man-made Fiber Production

7.5.2. 1. Man-made Fiber Producing Capacity

LMMFCPOA = COA100 + COA102*(0.2*(LAG3(USSSPC)+LAG4(USSSPC) +LAG5(USSSPC) +LAG6(USSSPC) +LAG7(USSSPC))) + COA104*(0.2*(LAG3(AOILP)+LAG4(AOILP) +LAG5(AOILP) +LAG6(AOILP) +LAG7(AOILP)))+COA103*LAG

Parameters	Estimates	Standard Error
COA100	74.55	20.12
COA102	8.68	0.104
COA103	0.93	0.028
COA104	-21.16	0.027
Adj. R-Square	0.815	
D-W	2.072	
Period of Fit	1985-2004	

7.5.2.2. Man-made Fiber Capacity Utilization

LMMFUPOA = COA110+ COA111*(USSSPC) + COA112*(AOILP)

Parameters	Estimates	Standard Error
COA110	-2.19	0.085
COA111	0.009	0.002
COA112	-0.003	0.005
COA113	3.64	1.22
Adj. R-Square	0.886	
D-W	1.815	
Period of Fit	1985-2004	

7.5.2.3. Man-made Fiber Production

MMFPROA =MMFUPOA*MMFCPOA

7.5.3. Fiber Mill Use

7.5.3.1. Per Capita Textile Consumption (in fiber equivalent)

LPFBPPNOA =COA51*(GDRNCOa/NNATTOa)

+COA52*(LAG(CTFSHOa)*CTAHAUs/GDDNCOa+(1-
LAG(CTFSHOa))*USSSPC/GDDNCOa)+COA54*D93

Parameters	Estimates	Standard Error
COA50	-1.09	0.769
COA51	1.19	0.204
COA52	-0.11	0.466
COA54	0.24	0.125
Adj. R-Square	0.934	
D-W	2.058	
Period of Fit	1986-2004	

7.5.3.2. Cotton Share

LCTFSHOA = COA60+COA61*LOG(LAG(CTFSHOA))+
COA62*LOG((CTAHAUS+CTSSIAUs*100)/USSSPC)

Parameters	Estimates	Standard Error
COA60	-0.93	0.196
COA61	2.25	0.174
COA62	-0.44	0.121
Adj. R-Square	0.734	
D-W	1.437	
Period of Fit	1986-2004	

7.5.3.3. Cotton Mill Use

CTUMIOA =FBPPNOA*CTFSHOA

7.5.3.4. Man-made Fiber Mill Use

MFCPCOA =(1-CTFSHOA-WLCSOA)*FBPPNOA

7.5.4. Ending Stock and Trade

7.5.4.1. Cotton Import

CTIMTOA = CTEXTOA -CTPPROA+CTUMIOA+CTCESOA -LAG(CTCESOA)

7.5.4.2. Cotton Export

LCTEXTOA = COA90+COA91*LOG(CTAHAUS/GDDNCOA)

Parameters	Estimates	Standard Error

COA90	3.56	0.050
COA91	0.28	0.058
Adj. R-Square	0.611	
D-W	1.885	
Period of Fit	1970-2004	

7.5.4.3. Ending stock

LCTCESOA = COA80 + COA81*(CTAHAUS/GDDNCOA)+
COA82*(CTPPROA+LAG(CTCESOA))

Parameters	Estimates	Standard Error
COA80	-40.39	1.139
COA81	-24.96	0.125
COA82	0.86	0.202
Adj. R-Square	0.570	
D-W	1.898	
Period of Fit	1970-2004	

CHAPTER 8
LATIN AMERICAN COUNTRIES' FIBER MODELS

8.1. Brazil Model

Brazil is one of the newest cotton developing areas. Share of total production with respect to world production increased from 2% in the earlier 90's to 6% in 2002/04. Soybean is the main competing crop. Other goods such as sugarcane and wheat have competing power in some regions. Due to strong international price, cotton planted area increased significantly in recent years.

Total fiber mill use has also increased from 2709.5 million pounds in 1993 to 3330.8 million pounds in 2002, the share of cotton consumption decreases from 67.5% to 56.5% and the share of man-made fiber mill use increases from 32.2% to 43.2%. As a result more cotton is available for export. The ratio of export with respect to production increases from less than 5 percent in the early 90's to 32% in 2002/04. Consequently, the share of export in the total world trade increases from less than 1 percent to 5 percent.

8.1.1. Price Linkage Equations

8.1.1.1. World to Domestic Soybean Price linkage

LSBPRTBR = CBR10 + CBR11*LOG(XRNUSBR*SBNAVUS)

Parameters	Estimates	Standard Error
CBR10	8.27	5.03
CBR11	0.94	0.33
Adj. R-Square	0.946	
D-W	1.851	
Period of Fit	1986-2004	

8.1.1.2. World to Domestic Sugarcane Price Linkage

LSJPPSBR = CBR20+CBR21*LOG(LAG(SJPPSBR)) + CBR22*LOG(XRNUSBR*SGPRWD)

Parameters	Estimates	Standard Error
CBR20	5.47	2.20
CBR21	0.35	0.13
CBR22	1.15	0.58
Adj. R-Square	0.67	
D-W	1.66	
Period of Fit	1986-2004	

8.1.1.3. World to Domestic Cotton Price Linkage

LCSPPRBR = CBR130 + CBR131*LOG(CTAHAUS*XRNUSBR)

Parameters	Estimates	Standard Error
CBR130	95.13	19.26
CBR131	5.59	0.51
Adj. R-Square	0.905	
D-W	1.815	
Period of Fit	1986-2004	

8.1.2. Cotton Supply

8.1.2.1 Cotton Acreage

CTAHAIBR = CBR30 + CBR31*(LAG(CTAHAIBR)) +
CBR32*(LAG(CSPPRBR/(**1**/**3***(SBPRTBR+SJPPSBR+CORNPBR))))
+CBR33*D93 + CBR34*D94

Parameters	Estimates	Standard Error
CBR30	-156.01	132.900
CBR31	0.97	0.074
CBR32	27.96	5.335
CBR33	324.53	71.700
CBR34	467.99	60.791
Adj. R-Square	0.930	
D-W	2.016	
Period of Fit	1986-2004	

8.1.2.2. Cotton Yield

CTYHABR = CBR40+ CBR41*(TREND)+ CBR42*LAG(CTYHABR)

Parameters	Estimates	Standard Error
CBR40	-0.005	0.002

CBR41	0.004	0.001
CBR42	0.92	0.31
Adj. R-Square	0.857	
D-W	1.873	
Period of Fit	1986-2004	

8.1.2.3. Cotton Production

CTPPRBR = CTAHAIBR*CTYHABR

8.1.3. Man-made Fiber Supply

8.1.3.1. Man-made Fiber Production Capacity

LMMFCPBR = CBR150 + CBR152*(**0.2***(LAG3(AOILP*XRNUSBR/GDDNCBR)
+ LAG4(AOILP*XRNUSBR/GDDNCBR)+ LAG5(AOILP*XRNUSBR/GDDNCBR)
+ LAG6(AOILP*XRNUSBR/GDDNCBR)+ LAG7(AOILP*XRNUSBR/GDDNCBR))) +
CBR154* (**0.2***(LAG3(USSSPC*XRNUSBR/GDDNCBR)+
LAG4(USSSPC*XRNUSBR/GDDNCBR)+ LAG5(USSSPC*XRNUSBR/GDDNCBR)+
LAG6(USSSPC*XRNUSBR/GDDNCBR)+ LAG7(USSSPC*XRNUSBR/GDDNCBR)))
+CBR155*D95

Parameters	Estimates	Standard Error
CBR150	385.86	100.620
CBR152	-200.03	20.069
CBR154	85.65	25.062
CBR155	-50.90	20.076
Adj. R-Square	0.735	
D-W	2.076	
Period of Fit	1986-2004	

8.1.3.2. Man-made Fiber Capacity Utilization

LMMFUPBR = CBR140 + CBR141*(USSSPC*XRNUSBR/GDDNCBR) +
CBR142*(AOILP*XRNUSBR/GDDNCBR)+CBR143*LAG(MMFUPBR) + CBR144*D99

Parameters	Estimates	Standard Error
CBR140	-1.85	0.171
CBR141	0.80	0.185
CBR142	-0.88	1.362
CBR143	3.43	1.25
CBR144	0.98	0.05
Adj. R-Square	0.852	
D-W	1.933	
Period of Fit	1986-2004	

8.1.3.3. Man-Made-Fiber Production

MMFPRBR = MMFUPBR*MMFCPBR

8.1.4. Fiber Mill Use

8..1.4.1. Per Capita Textile Consumption (in fiber equivalent)

PFBCPCBR = CBR60 + CBR61*(LAG(CTFSHBR)*CSPPRBR/GDDNCBR + (**1**-LAG(CTFSHBR))*USSSPC*XRNUSBR/GDDNCBR)+ CBR62*(GDRNCBR/NNATTBR)

Parameters	Estimates	Standard Error
CBR60	-2.43	1.167
CBR61	-0.69	0.204
CBR62	3.14	0.182
Adj. R-Square	0.781	
D-W	1.859	
Period of Fit	1986-2004	

8.1.4.2. Cotton Share in Mill Use

LCTFSHBR = CBR70 + CBR71*((CTAHAUS+CTSSIAUs***100)**/USSSPC)+CBR72*(LAG(CTFSHBR)) + CBR74*D03

Parameters	Estimates	Standard Error
CBR70	-2.23	0.93
CBR71	-0.35	0.18
CBR72	4.76	1.149
CBR74	0.52	0.483
Adj. R-Square	0.927	
D-W	1.872	
Period of Fit	1986-2004	

8.1.4.3. Cotton Mill Use

CTUMBR = FBCPCBR*CTFSHBR

8.1.4.4. Man-made fiber mill use

MFCPCBR = (**1**-CTFSHBR-WLCSBR)*FBCPCBR

8.1.5 Fiber Ending Stock and Trade

8.1.5.1. Cotton Ending Stock

LCTCESBR = CBR110 + CBR111*(LAG(CTCESBR) + CTPPRBR) +
CBR112*(CSPPRBR/GDDNCBR) + CBR113*d93

Parameters	Estimates	Standard Error
CBR110	135.04	20.377
CBR111	0.70	0.140
CBR112	-5.99	2.090
CBR113	109.91	39.435
Adj. R-Square	0.848	
D-W	2.156	
Period of Fit	1986-2004	

8.1.5.2. Cotton Imports

LCTIMTBR = CBR120 + CBR121*(CTAHAUS*XRNUSBR*22.04622/CSPPRBR)

Parameters	Estimates	Standard Error
CBR120	84.21	20.830
CBR121	-12.09	3.131
CBR122	0.85	0.24
Adj. R-Square	0.980	
D-W	2.002	
Period of Fit	1986-2004	

8.1.5.3. Cotton Exports

CTEXTCBR = CTPPRBR - CTUMBR + CTIMTBR -CTCESBR + LAG(CTCESBR)

8.2. Argentina Model

8.2.1. *World to Domestic Cotton Price Linkage*

LCSPPRAg=cAg80+cAg81*log(CTAHAUs*XRNUSAg)+cAg82*bshift90
+cAg83*d86+cAg84*d87+cAg85*(d89+d90);

Parameters	Estimates	Standard Error
CAG80	3.92	0.101
CAG81	0.64	0.138
CAG82	3.16	0.223
CAG83	0.94	0.121
CAG84	0.85	0.043
CAG85	3.31	0.432
Adj. R-Square	0.890	
D-W	1.557	

Period of Fit	1982-2004

8.2.2. Cotton Supply

8.2.2.1. Cotton Acreage

LCTAHAIAG = CAG20 + CAG21*(LAG(CTAHAIAG))+
CAG22*(LAG(CSPPRAG/(1/2*(SBPRTAG+WHPPSAG))))

Parameters	Estimates	Standard Error
CAG20	123.08	1.57
CAG21	0.73	0.22
CAG22	0.01	0.002
Adj. R-Square	0.871	
D-W	2.106	
Period of Fit	1982-2004	

8.2.2.2. *Cotton Yield*

CTYHAAG = CAG30 + CAG31*(TRENDCN-**22**) +
CAG32*SHIFT96

Parameters	Estimates	Standard Error
CAG30	0.353	0.056
CAG31	0.010	0.002
CAG32	-0.16	0.024
Adj. R-Square	0.892	
D-W	1.624	
Period of Fit	1982-2004	

8.2.2.3. Cotton Production

CTPPRIAG = CTYHAAG*CTAHAIAG

8.2.3. Man-made Fiber Supply

8.2.3.1. Man-made Fiber Production Capacity

MMFCPAG = CAG120 + CAG121 *(**0.2***(LAG3(AOILP*XRNUSAG/GDDNCAG)+
LAG4(AOILP*XRNUSAG/GDDNCAG) + LAG5(AOILP*XRNUSAG/GDDNCAG)
+ LAG6(AOILP*XRNUSAG/GDDNCAG) + LAG7(AOILP*XRNUSAG/GDDNCAG)))

+ CAG124*(**0.2***(LAG3(USSSPC*XRNUSAG/GDDNCAG)
+ LAG4(USSSPC*XRNUSAG/GDDNCAG) + LAG5(USSSPC*XRNUSAG/GDDNCAG)
+ LAG6(USSSPC*XRNUSAG/GDDNCAG) + LAG7(USSSPC*XRNUSAG/GDDNCAG)))

Parameters	Estimates	Standard Error
CAG120	168.18	17.110
CAG121	-78.38	0.011
CAG124	49.82	0.022
Adj. R-Square	0.861	
D-W	2.077	
Period of Fit	1970-2004	

8.2.3.2. Man-Made Fiber Capacity utilization

LMMFUPAG = CAG130 + CAG131*
(USSSPC*XRNUSAG/GDDNCAG) +CAG132*(AOILP*XRNUSAG/GDDNCAG)

Parameters	Estimates	Standard Error
CAG130	-0.27	0.11
CAG131	0.38	0.11
CAG132	-1.60	0.15
CAG1331	2.35	1.22
Adj. R-Square	0.87	
D-W	1.92	
Period of Fit	1970-2004	

8.2.3.3. *Man-made Fiber Production*

MMFPRAG = MMFUPAG*MMFCPAG

8.2.4. Fiber Mill Use

8.2.4.1. *Per Capita Textile Consumption (in fiber equivalent)*

LPFBCPCAG = CAG50 + CAG51*(LAG(CTFSHAG)*CSPPRAG/GDDNCAG+(**1**-
LAG(CTFSHAG))*USSSPC*XRNUSAG/GDDNCAG) +CAG52*(GDRNCAG/NNATTAG)
+CAG53*LAG(PFBCPCAG)

Parameters	Estimates	Standard Error
CAG50	3.20	0.11
CAG51	-86.64	0.040
CAG52	0.01	0.005
CAG53	0.52	0.025
Adj. R-Square	0.746	

D-W	1.976
Period of Fit	1983-2004

8.2.4.2. *Cotton Share*

LCTFSHAG = CAG60 + CAG61*((CTAHAUs+CTSSIAUs***100)**/(USSSPC)) +
CAG62*(LAG(CTFSHAG))

Parameters	Estimates	Standard Error
CAG60	-0.07	0.476
CAG61	-0.07	0.018
CAG62	0.71	0.378
Adj. R-Square	0.861	
D-W	1.992	
Period of Fit	1983-2004	

8.2.4.3. *Cotton Mill Use*

CTUMAG = FBCPCAG*CTFSHAG

8.2.4.4. *Man-made Fiber Mill Use*

MFCPCAG = (**1**-CTFSHAG-WLCSAG)*FBCPCAG

8.2.5. Cotton Ending Stock and Trade
8.2.5.1. Cotton Ending Stock

LCTCESAG = CAG100 + CAG101*LOG(LAG(CTCESAG) + CTPPRIAG) +
CAG102*LOG(CSPPRAG/GDDNCAG)

Parameters	Estimates	Standard Error
CAG100	0.32	0.10
CAG101	0.44	0.06
CAG102	-0.001	0.0005
Adj. R-Square	0.971	
D-W	2.030	
Period of Fit	1983-2004	

8.2.5.2. Cotton Imports

LCTIMTAG = CAG90 + CAG91*LOG(CTAHAUS*XRNUSAG/(CSPPRAG)*
(**1**+CTDQICAG/**100**))+ CAG92*(D88+D90+D91+D96)

Parameters	Estimates	Standard Error
CAG90	9.29	3.52
CAG91	-11.60	5.26
CAG92	34.61	5.42
Adj. R-Square	0.981	
D-W	2.030	
Period of Fit	1983-2004	

8.2.5.3. Cotton Exports

CTEXTCAG = CTPPRIAG - CTUMAG + CTIMTAG -CTCESAG + LAG(CTCESAG)

8.3. Other Latin America Model

Other Latin American region includes all Latin American countries except Argentina and Brazil. These countries account for only 1 and 1.5 percent of the world cotton production and consumption respectively.

8.3.1 Cotton Supply

8.3.1.1. *Cotton Acreage*

CTAHAILA =CLA10+CLA11*(LAG(CTAHAILA))+ CLA12*(LAG(CTAHAUS))

Parameters	Estimates	Standard Error
CLA10	70.37	16.93
CLA11	0.82	0.22
CLA12	0.93	0.28
Adj. R-Square	0.47	
D-W	1.72	
Period of Fit	1986-2004	

8.3.2.2. Cotton Yield

CTYHALA = CLA20 + CLA21*(TRENDCN-10)

Parameters	Estimates	Standard Error
CLA20	0.625	0.036
CLA21	0.002	0.001
Adj. R-Square	0.675	

D-W	1.683
Period of Fit	1986-2004

8.3.2.3. Cotton Production

CTPPRILA =CTYHALA*CTAHAILA

8.3.3. Man-made Fiber Supply

8.3.3.1. Man-made Fiber Production Capacity

LMMFCPLA = CLA100 + CLA101* (**0.2***(LAG3(AOILP)+LAG4(AOILP) +LAG5(AOILP) +LAG6(AOILP) + LAG7(AOILP))) + CLA103*LOG(**0.5***(LAG(USSSPC) +LAG2(USSSPC))) + CLA102*(**0.2***(LAG3(USSSPC)+LAG4(USSSPC) +LAG5(USSSPC) + LAG6(USSSPC) +LAG7(USSSPC)))

Parameters	Estimates	Standard Error
CLA100	58.32	10.94
CLA101	-4.46	0.091
CLA102	4.10	0.122
Adj. R-Square	0.695	
D-W	1.760	
Period of Fit	1986-2004	

8.3.3.2. Man-made Fiber Capacity Utilization

LMMFUPLA = CLA110+ CLA111*(USSSPC) + CLA112*(AOILP)+CLA113*LAG(MMFUPLA)

Parameters	Estimates	Standard Error
CLA110	-1.25	0.066
CLA111	0.006	0.0009
CLA112	-0.04	0.005
Adj. R-Square	0.610	
D-W	2.142	
Period of Fit	1986-2004	

8.3.3.3. Man-made Fiber Production

MMFPRLA =MMFUPLA*MMFCPLA

8.3.4. Fiber Mill Use

8.3.4.1. Per Capita Textile Consumption (in fiber equivalent)

LPFBCPCLA = CLA40 + CLA41*LOG(LAG(CTFSHLA)*CTAHAUS/GDDNCLA+(**1**-LAG(CTFSHLA))*USSSPC/GDDNCLA)+ CLA42*LOG(GDRNCLA/NNATTLA)

Parameters	Estimates	Standard Error
CLA40	1.04	0.095
CLA41	0.34	0.044
CLA42	-0.41	0.094
Adj. R-Square	0.74	
D-W	1.94	
Period of Fit	1986-2004	

8.3.4.2. Cotton Share

LCTFSHLA = CLA50+CLA51*((CTAHAUS+CTSSIAUs***100)**/(USSSPC)) + CLA52*(LAG(CTFSHLA))+CLA53*D82

Parameters	Estimates	Standard Error
CLA50	-0.47	0.070
CLA51	-0.08	0.059
CLA52	0.48	0.21
CLA53	0.29	0.15
Adj. R-Square	0.718	
D-W	1.955	
Period of Fit	1986-2004	

8.3.4.3. Cotton Mill Use

CTUMLA =FBCPCLA*CTFSHLA

8.3.5. Cotton Ending Stock and Trade

8.3.5.1. Cotton Imports

LCTIMTLA = CLA70+CLA71*LOG(CTAHAUS/GDDNCLA)

Parameters	Estimates	Standard Error
CLA70	4.72	0.056
CLA71	-0.49	0.034
Adj. R-Square	0.740	
D-W	1.689	
Period of Fit	1986-2004	

8.3.5.2. Cotton Exports

CTEXTCLA =CTPPRILA-CTUMLA+CTIMTLA-CTCESLA+LAG(CTCESLA)

8.3.5.3. Cotton Ending Stock

LCTCESLA = CLA80 + CLA81*LOG(LAG(CTCESLA)+CTPPRILA) + CLA82*LOG(CTAHAUS)

Parameters	Estimates	Standard Error
CLA80	87.76	7.42
CLA81	0.16	0.02
CLA82	-0.24	0.11
Adj. R-Square	0.767	
D-W	1.754	
Period of Fit	1986-2004	

CHAPTER 9
FORMER SOVIET UNION FIBER MODELS

9.1. Uzbekistan Model

9.1.1. Price Linkage

9.1.1.1. World to Domestic Cotton Price linkage

LCSPPRUZ = CUZ10+CUZ11*LOG(CTAHAUS*XRNUSUZ*2204.622/100)

Parameters	Estimates	Standard Error
CUZ10	1.21	0.222
CUZ11	0.786	0.016
Adj. R-Square	0.991	
D-W	1.905	
Period of Fit	1986-2004	

9.1.2. Cotton Supply

9.1.2.1. Cotton Acreage

LCTAHAIUZ = CUZ20+CUZ21*LOG(LAG(CTAHAIUZ))
+CUZ22*LOG(LAG(CSPPRUZ/WHPPSRU))+CUZ23*(D94+D95)

Parameters	Estimates	Standard Error
CUZ20	5.003	0.966
CUZ21	0.260	0.113
CUZ22	0.127	0.029
CUZ23	-0.103	0.019
Adj. R-Square	0.776	
D-W	1.878	
Period of Fit	1986-2004	

9.1.2.2. *Cotton Yield*

CTYHAUZ = CUZ30+CUZ31*(TRENDCN-**29**)+CUZ32*(LAG(CSPPRUZ/WHPPSRU))
+CUZ33*(D96+D00)+CUZ34*D98

Parameters	Estimates	Standard Error
CUZ30	0.692	0.055
CUZ31	0.005	0.003
CUZ32	0.001	0.001
CUZ33	-0.112	0.054
CUZ34	-0.140	0.068
Adj. R-Square	0.636	
D-W	1.662	
Period of Fit	1986-2004	

9.1.2.3. Cotton Production

CTPPRIUZ = CTYHAUZ*CTAHAIUZ

9.1.3. Fiber Mill Use

9.1.3.1 Per Capita Textile Consumption (in fiber equivalent)

LPFBCPCUZ = CUZ50 + CUZ51*LOG(LAG(CTFSHUZ)*CSPPRUZ/GDDNCUZ+(**1**-LAG(CTFSHUZ))*USSSPC*XRNUSUZ/GDDNCUZ)+CUZ52*LOG(GDRNCUZ/NNATTUZ) +CUZ53*D98+CUZ54*(D99+D00)

Parameters	Estimates	Standard Error
CUZ50	5.34	0.701
CUZ51	-0.58	0.111
CUZ52	0.035	0.014
CUZ53	-1.10	0.059
CUZ54	0.91	0.041
Adj. R-Square	0.896	
D-W	1.561	
Period of Fit	1986-2004	

9.1.3.2. Cotton Share

LCTFSHUZ = CUZ60 + CUZ61*((CSPPRUz/**2204.622**+CTSSIAUs*XRNUSUz) /(USSSPC*XRNUSUZ)) + CUZ62*(LAG(CTFSHUZ))+CUz63*D92

Parameters	Estimates	Standard Error
CUZ60	-0.21	0.150
CUZ61	-0.01	0.015
CUZ62	0.71	0.136
CUz63	0.54	0.224
Adj. R-Square	0.645	
D-W	2.066	
Period of Fit	1986-2004	

9.1.3.3. Cotton Mill Use

CTUMUZ = FBCPCUZ*CTFSHUZ

9.1.4. Ending Stock and Trade

9.1.4.1.Ending Stock

LCTCESUZ = CUZ80+CUZ81*LOG(LAG(CTCESUZ)+CTPPRIUZ)+ CUZ82*LOG(CSPPRUZ/GDDNCUZ)

Parameters	Estimates	Standard Error
CUZ80	5.89	0.625
CUZ81	0.14	0.076
CUZ82	-0.33	0.131
Adj. R-Square	0.876	
D-W	2.031	
Period of Fit	1986-2004	

9.1.4.2. Cotton Exports
CTEXTCUZ = CTPPRIUZ-CTUMUZ+CTIMTUZ +LAG(CTCESUZ)-CTCESUZ

9.2. Russia Model

9.2.1. Fiber Mill Use

9.2.1.1. Per Capita Textile Consumption (in fiber equivalent)

LPFBCPCRU = CRU10 + CRU11*(LAG(CTFSHRU)*CTAHAUS*XRNUSRU/GDDNCRU + LAG(**1**-CTFSHRU)*USSSPC*XRNUSRU/GDDNCRU)+ CRU12*(GDRNCRU/NNATTRU)

Parameters	Estimates	Standard Error
CRU10	7.00	0.193
CRU12	0.033	0.012
CRU11	-0.0012	0.0006
Adj. R-Square	0.959	
D-W	1.746	
Period of Fit	1986-2004	

9.2.1.2. Cotton share in Mill Use

LCTFSHRU = CRU20+CRU21*LOG((CTAHAUS+CTSSIAUs***100)**/USSSPC)+CRU22*LOG(LAG(CTFSHRU))

Parameters	Estimates	Standard Error
CRU20	-1.55	0.574
CRU21	-0.086	0.047
CRU22	2.740	0.668
Adj. R-Square	0.813	
D-W	1.551	
Period of Fit	1986-2004	

9.2.1.3. Cotton mill use

CTUMRU = FBCPCRU*CTFSHRU

9.2.2. Fiber Trade and Ending Stock

9.2.2.1. Cotton Imports

CTIMTRU = CTCESRU + CTUMRU - LAG(CTCESRU)- CTPPRIRU + CTEXTCRU

9.2.2.2. Cotton Ending Stock

LCTCESRU = CRU40 + CRU41*LOG(CTAHAUS*XRNUSRU/GDDNCRU)+
CRU42*LOG(LAG(CTCESRU))+CRU43*D94+CRU44*(D95+D96) +CRU45*D98

Parameters	Estimates	Standard Error
CRU40	1.55	1.026
CRU41	-0.25	0.156
CRU42	0.78	0.210
CRU43	0.55	0.134
CRU44	0.73	0.150
CRU45	-0.84	0.143
Adj. R-Square	0.914	
D-W	2.011	
Period of Fit	1986-2004	

9.3. Other Former Soviet Union Model

Other FSU includes all FSU republic excluding Uzbekistan and Russia. These countries produce and consume around 3% of world cotton. Because of data limitations, a combined man-made fiber production capacity, utilization and consumption for the entire FSU are modeled.

9.3.1 Cotton Supply

9.3.1.1. Cotton Acreage

CTAHAIFS = CFS10+CFS11*(LAG(CTAHAIFS))+CFS12*(LAG(CTAHAUS/(**1**/**3***
(WHPPSFS + CORNPFS+SOGHPFS))))+CFS13*(D89+D90+D94+D97)

Parameters	Estimates	Standard Error
CFS10	-151.95	42.600
CFS11	0.99	0.134
CFS12	315.12	108.900
CFS13	-91.07	28.455
Adj. R-Square	0.764	

D-W	2.062
Period of Fit	1986-2004

9.3.1.2. Cotton Yield

CTYHAFS =CFS20+CFS21*(TRENDCN-**20**)+CFS22*(LAG(CTAHAUS/(**1**/**3***(WHPPSFS+CORNPFS+SOGHPFS))))

Parameters	Estimates	Standard Error
CFS20	0.58	0.109
CFS21	0.003	0.001
CFS22	0.002	0.003
Adj. R-Square	0.738	
D-W	1.875	
Period of Fit	1986-2004	

9.3.1.3. *Cotton Production*

CTPPRFS =CTAHAIFS*CTYHAFS

9.3.2. FSU Man-made Fiber Supply

9.3.2.1 Man-made Fiber Production capacity

LMMFCPFS= CFS100 +CFS102*LOG(**0.2***(LAG3(AOILP)+LAG4(AOILP) +LAG5(AOILP) +LAG6(AOILP) +LAG7(AOILP))) + CFS104*LOG(**0.2***(LAG3(USSSPC) +LAG4(USSSPC)+LAG5(USSSPC) + LAG6(USSSPC) +LAG7(USSSPC)))

Parameters	Estimates	Standard Error
CFS100	1590.20	800.190
CFS102	-0.123	0.027
CFS104	0.144	0.022
Adj. R-Square	0.644	
D-W	1.798	
Period of Fit	1986-2004	

9.3.2.2. Man-made Fiber Capacity utilization

LMMFUPFS = CFS110 + CFS111*(USSSPC) + CFS112*(AOILP)+CFS115*LAG(MMFUPFS)

Parameters	Estimates	Standard Error
CFS110	-1.39	0.057
CFS111	0.008	0.041
CFS112	-0.04	0.033
CFS115	2.79	1.25
Adj. R-Square	0.706	
D-W	1.713	
Period of Fit	1986-2004	

9.3.2.3. Man-made Fiber Production

MMFPRFS =MMFUPFS*MMFCPFS

9.3.3. Other FSU Fiber Use

9.3.3.1. Per Capita Textile Consumption (in fiber equivalent)

LPFBCPCFS = CFS50 + CFS51*(GDRNCFS/NNATTFS) + CFS52*(LAG(FBCPCFS/NNATTFS))+ CFS53*(CTAHAUS/GDDNCFS*LAG(CTFSHFS)+(**1**-LAG(CTFSHFS))*USSSPC/GDDNCFS)

Parameters	Estimates	Standard Error
CFS50	1.90	0.178
CFS51	0.13	0.043
CFS52	0.70	0.395
CFS53	-0.66	0.224
Adj. R-Square	0.69	
D-W	2.068	
Period of Fit	1986-2004	

9.3.3.2. Cotton share

LCTFSHFS = CFS60+CFS61*(LAG(CTFSHFS))+CFS62*((CTAHAUS+CTSSIAUs***100)**/USSSPC)

Parameters	Estimates	Standard Error
CFS60	-1.67	0.178
CFS61	3.74	2.243
CFS62	-0.49	0.395
Adj. R-Square	0.690	
D-W	2.068	
Period of Fit	1986-2004	

9.3.3.3. Cotton Mill Use

CTUMIFS =FBCPCFS*CTFSHFS

9.3.4. Ending Stock and Trade

9.3.4.1. Cotton Exports

LCTEXTFS = CFS40+CFS41*LAG(CTEXTFS) + CFS42*(CTAHAUS) +CFS43*BSHIFT87

Parameters	Estimates	Standard Error
CFS40	144.16	51.093
CFS41	0.183	0.221
CFS42	4.588	2.186
CFS43	1314.32	135.114
Adj. R-Square	0.730	
D-W	1.675	
Period of Fit	1986-2004	

9.3.4.2. Cotton Imports

CTIMTFS= CTEXTFS - CTPPRFS + CTUMIFS + CTCESFS - LAG(CTCESFS)

9.3.4.3. Cotton Ending Stock

CTCESFS =CFS80 + CFS81*(CTAHAUS/GDDNCFS) + CFS82*(LAG(CTCESFS))
CFS83*D83+CFS84*d84

Parameters	Estimates	Standard Error
CFS80	-48.69	43.438
CFS81	-9.86	69.237
CFS82	0.29	0.107
CFS83	-287.30	87.795
CFS84	156.62	88.601
Adj. R-Square	0.886	
D-W	1.784	
Period of Fit	1986-2004	

CHAPTER 10
AFRICA FIBER MODEL

Africa accounts for 9% of the world cotton production and 2% of the world cotton consumption. In the model, Africa is divided into Egypt and Other Africa.

10.1. Egypt Model

10.1.1. Cotton Supply

10.1.1.1. Cotton Acreage

CTAHAIEG =CEG10 + CEG11*(LAG(CTAHAIEG)) + CEG12*(LAG(CSPPREG/(**1**/**2***(WHPPSEG+CORNPEG))))+CEG13*D94+CEG14* D96+CEG15* D98

Parameters	Estimates	Standard Error
CEG10	-19.36	2.717
CEG11	0.97	0.216
CEG12	25.69	4.892
CEG13	99.65	36.215
CEG14	101.26	32.724
CEG15	-98.16	20.436
Adj. R-Square	0.716	
D-W	2.083	
Period of Fit	1970-2004	

10.1.1.2. Cotton Yield

CTYHAEG = CEG20 + CEG21*(TRENDCN-10)+CEG22*(LAG(CSPPREG/(1/2*(WHPPSEG+CORNPEG))))

Parameters	Estimates	Standard Error
CEG20	0.789	0.081
CEG21	0.011	0.002
CEG22	0.056	0.046
Adj. R-Square	0.699	
D-W	1.679	
Period of Fit	1970-2004	

10.1.1.3. Cotton Production

CTPPREG = CTAHAIEG*CTYHAEG

10.1.2. Man-made Fiber Supply

10.1.2.1. Man-made Fiber Production Capacity

LMMFCPEG = CEG110 + CEG111*(0.5*(LAG(AOILP*XRNUSEG/GDDNCEG)
+LAG2(AOILP*XRNUSEG/GDDNCEG)))
+CEG112*(0.2*(LAG3(AOILP*XRNUSEG/GDDNCEG)
+LAG4(AOILP*XRNUSEG/GDDNCEG)
+LAG5(AOILP*XRNUSEG/GDDNCEG)+LAG6(AOILP*XRNUSEG/GDDNCEG)
+LAG7(AOILP*XRNUSEG/GDDNCEG)))
+ CEG113*(0.5*(LAG(USSSPC*XRNUSEG/GDDNCEG)
+LAG2(USSSPC*XRNUSEG/GDDNCEG)))
+ CEG114*(0.2*(LAG3(USSSPC*XRNUSEG/GDDNCEG)
+LAG4(USSSPC*XRNUSEG/GDDNCEG)+LAG5(USSSPC*XRNUSEG/GDDNCEG)
+LAG6(USSSPC*XRNUSEG/GDDNCEG+LAG7(USSSPC*XRNUSEG/GDDNCEG)))

Parameters	Estimates	Standard Error
CEG110	-20.94	7.65
CEG111	-17.37	0.01
CEG112	-0.41	0.18
CEG113	1.13	0.12
CEG114	-133.20	20.06
Adj. R-Square	0.850	
D-W	1.835	
Period of Fit	1986-2004	

10.1.2.2. Man-made Fiber Capacity utilization

LMMFUPEG = CEG120 + CEG121*
(USSSPC*XRNUSEG/GDDNCEG)+CEG122*
AOILP*XRNUSEG/GDDNCEG+CEG123*LAG(MMFUPEG)

Parameters	Estimates	Standard Error
CEG120	-2.33	0.22
CEG121	0.07	0.03
CEG122	-0.15	0.15
CEG123	4.51	1.26
Adj. R-Square	0.761	
D-W	1.883	
Period of Fit	1986-2004	

10.1.2.3. Man-made Fiber Production

MMFPREG =MMFUPEG*MMFCPEG

10.1.3. Fiber Mill Use

10.1.3.1. Per Capita Textile Consumption (in fiber equivalent)

LPFBCPCEG = CEG50 + CEG51*(GDRNCEG/NNATTEG)+
CEG52*(LAG(CTFSHEG)*CSPPREG/GDDNCEG+LAG(1-
CTFSHEG)*USSSPC*XRNUSEG*2204.622/GDDNCEG)
+CEG53*LAG(PFBCPCEG)

Parameters	Estimates	Standard Error
CEG50	3.06	1.096
CEG51	0.048	0.129
CEG52	-0.039	0.116
CEG53	0.57	0.125
Adj. R-Square	0.853	
D-W	3.088	
Period of Fit	1970-2004	

10.1.3.2. *Cotton Share*

LCTFSHEG = CEG60 +cEg61*(USSSPC*XRNUSEg)/GDDNCEg
+cEg62*(CSPPREG/(**50*2.204622**)+CTSSIAUs*XRNUSEg)/GDDNCEg);

Parameters	Estimates	Standard Error
CEG60	1.91	0.144
CEG61	-42.31	0.195
CEG62	0.23	0.142
Adj. R-Square	0.796	
D-W	2.138	
Period of Fit	1970-2004	

10.1.3.3. *Cotton mill use*

CTUMIEG =FBCPCEG*CTFSHEG

10.1.4. Cotton Ending Stock and Trade

10.1.4.1. Cotton Ending Stock
LCTCESEG = CEG80 + CEG81*(CSPPREG/GDDNCEG)+CEG82*
(CTPPREG+LAG(CTCESEG))+ CEG83*(D96)

Parameters	Estimates	Standard Error
CEG80	33.17	0.058
CEG81	-2.90	0.037
CEG82	0.75	0.236
CEG83	89.64	0.169
Adj. R-Square	0.671	

D-W	2.042
Period of Fit	1970-2004

10.1.4.2. *Cotton Export*

CTEXTEG = CTPPREG+CTIMTEG-CTUMIEG-CTCESEG + LAG(CTCESEG)

10.1.4.3. *Cotton Imports*

LCTIMTEG = CEG90 + CEG91*(CTAHAUS*XRNUSEG/CSPPREG) + CEG92*(LAG(CTIMTEG))

Parameters	Estimates	Standard Error
CEG90	33.19	0.157
CEG91	-29.32	0.154
CEG92	0.58	0.228
Adj. R-Square	0.437	
D-W	1.955	
Period of Fit	1970-2004	

10.2. Western Africa Model

10.2.1. Cotton Supply

10.2.1.1. Cotton Acreage

CTAHAIWa=cWa10+cWa11*(lag(CTAHAIWa))
+cWa12*(lag(CTPPSwa))+cWa13*d92;

Parameters	Estimates	Standard Error
CWa10	-22.52	12.157
CWa11	0.45	0.354
CWa12	1.88	0.228
CWa13	53.39	23.43
Adj. R-Square	0.883	
D-W	1.758	
Period of Fit	1970-2004	

10.2.2. Cotton Yield

CTYHAWa =cWa20+cWa21*(TRENDCn-10) + cWa22*d74;

Parameters	Estimates	Standard Error
CWa20	0.33	0.157
CWa21	0.005	0.002
CWa22	-0.06	0.028
Adj. R-Square	0.923	
D-W	1.675	

Period of Fit	1970-2004

10.2.3. Cotton Production

=CTAHAIWa*CTYHAWa;

10.2.4. Cotton Mill Use

CTUMIWa/NNATTWa =cWa50+cWa51*lag(CTUMIWa/NNATTWa)+
cWa52*(CTPPSwa/(USSSPC/**100***XRNUSWa***2.204622**))
+ cWa53*(GDRNCWa/NNATTWa);

Parameters	Estimates	Standard Error
CWa50	-0.25	0.113
CWa51	1.04	0.452
CWa52	-0.25	0.221
CWa53	4.3e-5	0.000002
Adj. R-Square	0.932	
D-W	2.075	
Period of Fit	1970-2004	

10.2.5. Cotton Ending Stock

eq.Wa8=cWa80+cWa81*(CTPPSwa)+cWa82*(CTPPRWa+lag(CTCESWa))
-(CTCESWa)+eWa8;

Parameters	Estimates	Standard Error
CWa80	-48.54	15.21
CWa81	-0.42	0.15
CWa82	0.53	0.22
Adj. R-Square	0.983	
D-W	1.995	
Period of Fit	1970-2004	

10.2.6. Cotton Export

=CTPPRWa+CTIMTWa-CTUMIWa-CTEXTWa-CTCESWa+lag(CTCESWa).

10.2. Other Africa Model

10.2.1. Cotton Supply

10.2.1.1. Cotton Acreage

CTAHAIOF = COF10+COF11*(LAG(CTAHAIOF))+COF12*
(LAG(CTAHAUS*XRNUSOF/(**1**/**2***(WHPPSOF+CORNPOF))))

Parameters	Estimates	Standard Error
COF10	571.94	235.400
COF11	0.74	0.271
COF12	0.39	0.122
Adj. R-Square	0.926	
D-W	2.141	
Period of Fit	1975-2004	

10.2.1.2. Cotton Yield

CTYHAOF = COF20+COF21*(TRENDCN-**10**)

Parameters	Estimates	Standard Error
COF20	0.176	0.025
COF21	0.002	0.001
Adj. R-Square	0.671	
D-W	1.788	
Period of Fit	1975-2004	

10.2.1.3. Cotton Production

CTPPROF=CTAHAIOF*CTYHAOF

10.2.2. Man-made Fiber Supply

10.2.2.1. Man-made Fiber Production Capacity

LMMFCPOF = COF100+COF101* (0.2*(LAG3(AOILP)+LAG4(AOILP) +LAG5(AOILP) +LAG6(AOILP)+LAG7(AOILP))) +COF102 *(0.2*(LAG3(USSSPC)+LAG4(USSSPC) +LAG5(USSSPC) +LAG6(USSSPC)+LAG7(USSSPC))) +COF105*LAG(MMFCPOF)

Parameters	Estimates	Standard Error
COF100	-35.04	10.673
COF101	-3.23	0.796
COF102	1.56	1.233
COF103	0.61	0.114
Adj. R-Square	0.725	
D-W	2.117	
Period of Fit	1986-2004	

10.2.2.2. Man-made Fiber Capacity Utilization

LMMFUPOF = COF110+ COF111*(USSSPC) + COF112*(AOILP)

Parameters	Estimates	Standard Error
COF110	0.87	0.055
COF111	0.007	0.0002
COF112	-0.02	0.0009
Adj. R-Square	0.951	
D-W	1.774	
Period of Fit	1986-2004	

10.2.2.3. Man-made Fiber Production

MMFPROF =MMFUPOF*MMFCPOF

10.2.3. Fiber Mill use

10.2.3.1. Per Capita Textile Consumption (in fiber equivalent)

LPFBCPCOF =COF50+COF51*(GDRNCOF/NNATTOF)
+ COF52*(LAG(CTFSHOF)*CTAHAUS*XRNUSOF/GDDNCOF+LAG(1-CTFSHOF)*USSSPC*XRNUSOF*2204.622/GDDNCOF)

Parameters	Estimates	Standard Error
COF50	0.69	0.187
COF51	1.46	0.518
COF52	-0.00029	0.000011
Adj. R-Square	0.648	
D-W	1.885	
Period of Fit	1970-2004	

10.2.3.2. Cotton share in Mill Use

LCTFSHOF
=COF60+cOf61*(lag(CTFsHOf))+cOf62*((CTAHAUs+CTSSIAUs*100)/USSSPC)

Parameters	Estimates	Standard Error
COF60	-2.11	0.100
COF61	4.23	0.147
COF62	-0.02	0.098
Adj. R-Square	0.900	
D-W	1.815	
Period of Fit	1970-2004	

10.2.3.3. *Cotton mill use*

CTUMIOF =FBCPCOF*CTFSHOF

10.2.3.4. Man-made fiber mill use

MFCPCTF=(1-(CTUMIOF+CTUMIEG)/(FBCPCEG+FBCPCOF)-
WLCSTF)*(FBCPCEG+FBCPCOF)

10.2.4. Fiber Ending Stock and Trade

10.2.4.1. Cotton Exports

CTEXTOF =
COF40+COF41*(LAG(CTEXTOF))+COF42*(CTAHAUS*XRNUSOF/GDDNCOF)

Parameters	Estimates	Standard Error
COF40	200.14	17.400
COF41	0.44	0.110
COF42	0.097	0.049
Adj. R-Square	0.938	
D-W	1.684	
Period of Fit	1970-2004	

10.2.4.2. *Cotton Imports*

CTIMTOF = CTEXTOF -CTPPROF+CTUMIOF +CTCESOF-LAG(CTCESOF)

10.2.4.3. Cotton Ending Stock

CTCESOF = COF80+COF81*(CTAHAUS*XRNUSOF/GDDNCOF)

+COF82*(CTPPROF+LAG(CTCESOF)) + COF83*SHIFT97

Parameters	Estimates	Standard Error
COF80	6.09	3.80
COF81	-0.24	2.92
COF82	0.36	0.028
COF83	34.99	7.52
Adj. R-Square	0.976	
D-W	1.362	
Period of Fit	1970-2004	

CHAPTER 11
MIDDLE-EAST FIBER MODEL

Middle East accounts for 7% of the world cotton production and 8% of the world cotton consumption. Middle East is separated as Turkey and other Middle East in the model.

11.1. Turkey Model

11.1.1. Price Linkage

11.1.1.1. World to Domestic Wheat Price Linkage

LWHPPSTK = CTK10+CTK11*LOG(WTNAVUS*XRNUSTK)

Parameters	Estimates	Standard Error
CTK10	5.13	0.326
CTK11	0.95	0.041
Adj. R-Square	0.95	
D-W	1.64	
Period of Fit	1970-2004	

11.1.1.2. World to Domestic Corn Price Linkage

LCORNPTK = CTK20+CTK21*LOG(CNNAVUS*XRNUSTK)

Parameters	Estimates	Standard Error
CTK20	6.38	0.243
CTK21	0.74	0.032
Adj. R-Square	0.973	
D-W	1.575	
Period of Fit	1970-2004	

11.1.1.3. World to Domestic Cotton Price Linkage

LCSPPRTK = CTK130+CTK131*LOG(CTAHAUS*XRNUSTK)

Parameters	Estimates	Standard Error
CTK130	2.84	1.020
CTK131	1.00	0.094
Adj. R-Square	0.646	
D-W	1.891	
Period of Fit	1970-2004	

11.1.2. Cotton Supply

11.1.2.1. Cotton Acreage

LCTAHAITK =
CTK30+CTK31*LOG(LAG(CTAHAITK))+CTK32*LOG(LAG(CSPPRTK*100
/(1/2*(CORNPTK+WHPPSTK))))

Parameters	Estimates	Standard Error
CTK30	238.34	3.378
CTK31	0.52	0.028
CTK32	0.29	0.011
Adj. R-Square	0.700	
D-W	2.063	
Period of Fit	1970-2004	

11.1.2.2. Cotton Yield

CTYHATK = CTK40+CTK41*(TRENDCN-10)
+CTK42*(LAG(CSPPRTK*100/(1/2*(CORNPTK+WHPPSTK))))

Parameters	Estimates	Standard Error
CTK40	0.37	0.045
CTK41	0.03	0.001
CTK42	0.001	0.000
Adj. R-Square	0.961	
D-W	2.033	
Period of Fit	1970-2004	

11.1.2.3. Cotton Production

CTPPRITK = CTYHATK*CTAHAITK

11.1.3. Man-made Fiber Supply

11.1.3.1. Man-made Fiber Production Capacity

LMMFCPTK = CTK140 + CTK141* (0.2*(LAG3(AOILP*XRNUSTK/GDDNCTK)
+LAG4(AOILP*XRNUSTK/GDDNCTK)
+LAG5(AOILP*XRNUSTK/GDDNCTK)+LAG6(AOILP*XRNUSTK/GDDNCTK)
+LAG7(AOILP*XRNUSTK/GDDNCTK))
+CTK143* (0.2*(LAG3(USSSPC*XRNUSTK/GDDNCTK)
+LAG4(USSSPC*XRNUSTK/GDDNCTK)+LAG5(USSSPC*XRNUSTK/GDDNCTK)
+LAG6(USSSPC*XRNUSTK/GDDNCTK)+LAG7(USSSPC*XRNUSTK/GDDNCTK)))

+CTk142*LAG(MMFCPTK)

Parameters	Estimates	Standard Error
CTK140	75.87	234.403
CTK141	-3.65	0.019
CTK142	1.04	0.018
CTK143	0.13	0.182
Adj. R-Square	0.771	
D-W	1.656	
Period of Fit	1986-2004	

11.1.3.2. Man-made Fiber Capacity Utilization

LMMFUPTK =CTK150+CTK151*(USSSPC*XRNUSTK/GDDNCTK)+
CTK152*(AOILP*XRNUSTK/GDDNCTK)

Parameters	Estimates	Standard Error
CTK150	-2.59	0.098
CTK151	0.016	0.006
CTK152	-0.047	0.004
Adj. R-Square	0.771	
D-W	1.656	
Period of Fit	1986-2004	

11.1.3.3. Man-made Fiber Production

MMFPRTK =MMFUPTK*MMFCPTK

11.1.4. Fiber Mill Use

11.1.4.1. Per Capita Textile Consumption (in fiber equivalent)

LPFBCPCTK = CTK60 +CTK61*(LAG(CTFSHTK)*CSPPRTK/GDDNCTK+(**1**-
LAG(CTFSHTK))*USSSPC*XRNUSTK/GDDNCTK)+ CTK62*(GDRNCTK/NNATTTK)+
CTK63*(D95+D96)

Parameters	Estimates	Standard Error
CTK60	1.15	0.325
CTK61	-0.001	0.0004
CTK62	0.002	0.008
CTK63	0.96	0.034
Adj. R-Square	0.706	
D-W	1.844	
Period of Fit	1970-2004	

11.1.4.2. Cotton Share in Mill Use

LCTFSHTK = CTK70
+cTk71*((CSPPRTK/**2204.622**+CTSSIAUs*XRNUSTk)+CTk72*((USSSPC*XRNUSTk)/**100**)
+ctk73*LAG(CTFSHTK)

Parameters	Estimates	Standard Error
CTK70	-0.09	0.184
CTK71	-3.56	0.251
CTK72	0.019	0.0024
CTK73	3.56	1.243
Adj. R-Square	0.702	
D-W	2.017	
Period of Fit	1970-2004	

11.1.4.3. Cotton Mill Use

CTUMTK =FBCPCTK*CTFSHTK

11.1.5. Ending Stock and Trade

11.1.5.1. Cotton Imports

CTIMTTK = -CTPPRITK + CTUMTK+CTCESTK+CTEXTCTK-LAG(CTCESTK)

11.1.5.2. Cotton Exports

CTEXTCTK = CTK90+CTK91*(CTAHAUS*XRNUSTK/CSPPRTK)
+cTK92*LAG(CTEXTCTk)

Parameters	Estimates	Standard Error
CTK90	4.18	39.924
CTK91	3.29	267.012
CTk92	0.591	0.132
Adj. R-Square	0.698	
D-W	2.923	
Period of Fit	1970-2004	

11.1.5.3. Cotton Ending Stock

LCTCESTK = CTK110+CTK111*(LAG(CTCESTK)+CTPPRITK)+
CTK112*(CSPPRTK/GDDNCTK)

Parameters	Estimates	Standard Error
CTK110	-96.76	2.44
CTK111	0.33	0.33
CTK112	-0.07	0.04
Adj. R-Square	0.852	
D-W	2.011	
Period of Fit	1970-2004	

11.2. Other Middle East Model

11.2.1. Cotton Supply

11.2.1.1. *Cotton Acreage*

LCTAHAIOM = COM10+COM11*LOG(LAG(CTAHAIOM))+
COM12*LOG(LAG(CTAHAUS/(1/2*(WHPPSOM+CORNPOM))))

Parameters	Estimates	Standard Error
COM10	128.13	20.65
COM11	0.75	0.10
COM12	12.79	5.09
Adj. R-Square	0.84	
D-W	2.10	
Period of Fit	1970-2004	

11.2.1.2. *Cotton Yield*

CTYHAOM =COM20+COM21*(TRENDCN-10)

Parameters	Estimates	Standard Error
COM20	0.51	0.154
COM21	0.01	0.002
Adj. R-Square	0.883	
D-W	1.848	
Period of Fit	1970-2004	

11.2.1.3. *Cotton Production*

CTPPROM =CTAHAIOM*CTYHAOM

11.2.2. Man-made Fiber Supply

11.2.2.1. Man-made Fiber Production Capacity

LMMFCPOM = COM100 +COM101 *(0.2*(LAG3(AOILP)+LAG4(AOILP) +LAG5(AOILP) +LAG6(AOILP)+LAG7(AOILP))) +COM103*(0.5*(LAG(USSSPC) +LAG2(USSSPC))) +COM102*(0.2*(LAG3(USSSPC)+LAG4(USSSPC) +LAG5(USSSPC) +LAG6(USSSPC) +LAG7(USSSPC)))+COM103*LAG(MMFCPOM)

Parameters	Estimates	Standard Error
COM100	-37.46	51.411
COM101	-0.75	0.017
COM102	0.61	0.026
COM103	1.13	0.024
Adj. R-Square	0.896	
D-W	1.781	
Period of Fit	1986-2004	

11.2.2.2. Man-made Fiber Capacity Utilization

LMMFUPOM = COM110+ COM111*(USSSPC) +COM112*(AOILP)

Parameters	Estimates	Standard Error
COM110	-4.16	0.173
COM111	0.02	0.061
COM112	-0.008	0.024
Adj. R-Square	0.914	
D-W	1.836	
Period of Fit	1986-2004	

11.2.2.3. Man-made Fiber Production

MMFPROM =MMFUPOM*MMFCPOM

11.2.3. Fiber Mill Use

11.2.3.1. Per Capita Textile Consumption (in fiber equivalent)

PFBCPCOM = COM50+COM51*(GDRNCOM/NNATTOM)+
COM52*(LAG(CTFSHOM)*CTAHAUS/GDDNCOM +LAG(**1**-
CTFSHOM)*USSSPC/GDDNCOM) +COM53*LAG(FBCPCOM/POP)

Parameters	Estimates	Standard Error
COM50	-3.56	1.232

COM51	6.02	0.056
COM52	-0.36	0.043
COM53	0.77	0.231
Adj. R-Square	0.893	
D-W	1.712	
Period of Fit	1981-2004	

11.2.3.2. Cotton Share

LCTFSHOM = COM60+COM61*com61*(lag(CTFSHOm))-
0.1497*((CTAHAUs+CTSSIAUs***100**)/USSSPC)

Parameters	Estimates	Standard Error
COM60	-2.29	0.183
COM61	4.49	1.511
COM62	-0.04	0.048
Adj. R-Square	0.848	
D-W	1.935	
Period of Fit	1981-2004	

11.2.3.3. Cotton Mill Use

CTUMOM = FBCPCOM*CTFSHOM

11.2.3.4. Man-made Fiber Mill Use

MFCPCME =(1-(CTUMOM+CTUMTK)/(FBCPCTK+FBCPCOM)-
WLCSME)*(FBCPCTK+FBCPCOM)

11.2.4. Ending Stock and Trade

11.2.4.1. Cotton Exports

LCTEXTOM = COM40+COM41*(TRENDCN)+COM42*(CTAHAUS)

Parameters	Estimates	Standard Error
COM40	45.33	0.826
COM41	0.74	0.179
COM42	0.10	0.065
Adj. R-Square	0.738	
D-W	1.725	
Period of Fit	1970-2004	

11.2.4.2. Cotton Imports

CTIMTOM = CTEXTOM -CTPPROM+CTUMOM +CTCESOM-LAG(CTCESOM)

11.2.4. 3. Cotton Ending Stock

LCTCESOM =
COM80+COM81*(CTAHAUS/GDDNCOM)+COM82*(CTPPROM+LAG(CTCESOM))

Parameters	Estimates	Standard Error
COM80	-51.23	0.867
COM81	-5.56	0.015
COM82	0.31	0.137
Adj. R-Square	0.919	
D-W	2.177	
Period of Fit	1970-2004	

CHAPTER 12
EUROPEAN FIBER MODEL

Europe is separate into EU-15, Eastern and Central Europe and other Western Europe.

12.1. EU-25 Model

12.1.1. Price Linkage

12.1.1.1. Polyester price linkage

LPLPRTEU = CEU100+CEU101*LOG(USSSPC*XRNUSEU)

Parameters	Estimates	Standard Error
CEU100	-0.68	0.29
CEU101	1.19	0.198
Adj. R-Square	0.864	
D-W	1.924	
Period of Fit	1970-2004	

12.1.2. Cotton Supply

12.1.2.1. Cotton Acreage

IF (CTMGQEU-CTPPREU)>**0** THEN CTAHAIEU =CEU10+CEU11*(LAG(CTAHAIEU))
+CEU12*(CTTGPEU/LAG(**1**/**2***(WHPPSEU+CORNPEU)))
ELSE IF (CTMGQEU-CTPPREU)<=**0** THEN
CTAHAIEU=CEU10+CEU11*(LAG(CTAHAIEU))+CEU12*((CTMGQEU/LAG(CTPPREU)*
CTTGPEU+(**1**-CTMGQEU/LAG(CTPPREU))*LAG(CTAHAUS/**100***XRNUSEU))
/LAG(**1**/**2***(WHPPSEU+CORNPEU)))

Parameters	Estimates	Standard Error
CEU10	128.79	67.382
CEU11	2.442	0.119
CEU12	0.578	0.140
Adj. R-Square	0.667	
D-W	1.841	
Period of Fit	1970-2004	

12.1.2.2. Cotton Yield

IF (CTMGQEU-CTPPREU)>**0** THEN
CTYHAEU=CEU20+CEU21*TRENDCN+CEU22*(CTTGPEU/LAG(**1**/**2***(WHPPSEU+CORN
PEU)))
ELSE IF (CTMGQEU-CTPPREU)<=**0** THEN CTYHAEU = CEU20+CEU21*TRENDCN
+CEU22*((CTMGQEU/LAG(CTPPREU)*CTTGPEU+(**1**-
CTMGQEU/LAG(CTPPREU))*LAG(CTAHAUS/**100***XRNUSEU))/LAG(**1**/**2***(WHPPSEU+C
ORNPEU)))

Parameters	Estimates	Standard Error
CEU20	0.566	0.125
CEU21	0.010	0.004
CEU22	0.006	0.002
Adj. R-Square	0.616	
D-W	1.723	
Period of Fit	1970-2004	

12.1.2.3. Cotton Production

CTPPREU =CTAHAIEU*CTYHAEU

12.1.3. Man-made Fiber Supply

12.1.3.1. Man-made Fiber Production Capacity

LMMFCPEU = CEU110+CEU112*
(**0.2***(LAG3(AOILP*XRNUSEU/GDDNCEU)+LAG4(AOILP*XRNUSEU/GDDNCEU)
+LAG5(AOILP*XRNUSEU/GDDNCEU) +LAG6(AOILP*XRNUSEU/GDDNCEU)
+LAG7(AOILP*XRNUSEU/GDDNCEU)))
+CEU114*(**0.2***(LAG3(USSSPC*XRNUSEU/GDDNCEU)
+LAG4(USSSPC*XRNUSEU/GDDNCEU) +LAG5(USSSPC*XRNUSEU/GDDNCEU)
+LAG6(USSSPC*XRNUSEU/GDDNCEU) +LAG7(USSSPC*XRNUSEU/GDDNCEU)))

Parameters	Estimates	Standard Error
CEU110	2656.81	1580.105
CEU112	-3018.18	780.039
CEU114	1818.87	50.043
Adj. R-Square	0.702	
D-W	1.636	
Period of Fit	1986-2004	

12.1.3.2. Man-made Fiber Capacity Utilization

LMMFUPEU = CEU120 + CEU121*(USSSPC*XRNUSEU/ GDDNCEU) +
CEU122*(AOILP*XRNUSEU/GDDNCEU)+CEU123*LAG(LMMFUPEU)

Parameters	Estimates	Standard Error
CEU120	0.41	0.039
CEU121	0.99	0.314
CEU122	-1.93	0.180
CEU123	1.99	0.43
Adj. R-Square	0.965	
D-W	2.761	
Period of Fit	1986-2004	

12.1.3.3. Man-made Fiber Production

MMFPREU =MMFUPEU*MMFCPEU

12.1.4. Fiber Mill Use

12.1.4.1. Per Capita Textile Consumption (in fiber equivalent)

PFBCPCEU = CEU50+CEU51*(GDRNCEU/NNATTEU)+CEU52*(LAG(CTFSHEU)*CTAHAUS*XRNUSEU/GDDNCEU+LAG(**1**-CTFSHEU)*USSSPC*XRNUSEU/GDDNCEU)

Parameters	Estimates	Standard Error
CEU50	-1.00	1.211
CEU51	0.09	0.035
CEU52	0.97	0.579
CEU53	-56.22	24.563
Adj. R-Square	0.653	
D-W	1.662	
Period of Fit	1981-2004	

12.1.4.2. Cotton share

LCTFSHEU = CEU60+**CEU61***(LAG(CTFsHEu))+CEU62*(CTAHAUs/USSSPC)

Parameters	Estimates	Standard Error
CEU60	-3.05	1.093
CEU61	8.94	1.055
CEU62	-0.10	0.003
Adj. R-Square	0.972	
D-W	1.570	
Period of Fit	1981-2004	

12.1.4.3. Cotton Mill Use

CTUMIEU =FBCPCEU*CTFSHEU

12.1.4.4. Man-made Fiber Mill Use

MFCPCEU =(1-(CTUMIOE+CTUMIEU)/FBCPCEU-WLCSEU)*FBCPCEU

12.1.5. Fiber Ending Stock and Trade

12.1.5.1. Cotton Imports

CTIMTEU =CEU40+CEU41*(LAG(CTIMTEU))
+CEU42*(CTAHAUS*XRNUSEU/GDDNCEU)

Parameters	Estimates	Standard Error
CEU40	-56.71	35.783
CEU41	1.09	0.077
CEU42	-11154.6	1000.900
Adj. R-Square	0.962	
D-W	1.744	
Period of Fit	1970-2004	

12.1.5.2. Cotton Exports

CTEXTEU =CTPPREU+CTIMTEU-CTUMIEU-CTCESEU+LAG(CTCESEU)

12.1.5.3. Cotton Ending Stock

LCTCESEU = CEU80+CEU81*(CTAHAUS*XRNUSEU/GDDNCEU)+
CEU82*(CTPPREU+LAG(CTCESEU))

Parameters	Estimates	Standard Error
CEU80	-176.46	1.333
CEU81	-82.27	0.063
CEU82	0.56	0.200
Adj. R-Square	0.777	
D-W	2.187	
Period of Fit	1970-2004	

12.2. Eastern and Central Europe Model

12.2.1. Man-made Fiber Supply

12.2.1.1. Man-made Fiber Capacity

LMMFCPEC = CEC60 + CEC61
*(**0.2***(LAG3(AOILP/GDDNCEC)+LAG4(AOILP/GDDNCEC) +LAG5(AOILP/GDDNCEC)
+LAG6(AOILP/GDDNCEC) +LAG7(AOILP/GDDNCEC)))
+CEC62*(**0.2***(LAG3(USSSPC/GDDNCEC)+LAG4(USSSPC/GDDNCEC)
+LAG5(USSSPC/GDDNCEC) +LAG6(USSSPC/GDDNCEC) +LAG7(USSSPC/GDDNCEC)))

Parameters	Estimates	Standard Error
CEC60	1061.78	458.423
CEC61	-268.91	0.017
CEC62	119.49	0.026
Adj. R-Square	0.708	
D-W	2.103	
Period of Fit	1986-2004	

12.2.1.2. Man-made Fiber Capacity Utilization
LMMFUPEC =CEC70+CEC71*USSSPC/GDDNCEC
+ CEC72*(AOILP/GDDNCEC

Parameters	Estimates	Standard Error
CEC70	0.62	0.036
CEC71	0.26	0.032
CEC72	0.40	0.049
Adj. R-Square	0.955	
D-W	2.045	
Period of Fit	1986-2004	

12.2.1.3. Man-made Fiber Production

MMFPREC =MMFUPEC*MMFCPEC

12.3. **Other Western Europe Model**

12.3.1. Cotton Mill Use

PCTUMIOE = COE10+COE11*(GDRNCOE/NNATTOE)+ COE12*(CTAHAUS/USSSPC)

Parameters	Estimates	Standard Error
COE10	5.68	1.410
COE11	0.000026	0.00002
COE12	-0.008	0.002
Adj. R-Square	0.641	
D-W	2.064	
Period of Fit	1970-2004	

12.3.2. Cotton Exports

CTIMTOE =CTEXTOE - CTPPROE + CTUMIOE +CTCESOE - LAG(CTCESOE)

12.3.3. Cotton Ending Stock

LCTCESOE = COE20 +
COE21*LOG(CTAHAUS/GDDNCOE)+COE22*LOG(CTPPROE+LAG(CTCESOE))

Parameters	Estimates	Standard Error
COE20	0.66	0.142
COE21	-0.21	0.135
COE22	0.81	0.073
Adj. R-Square	0.933	
D-W	1.827	
Period of Fit	1970-2004	

CHAPTER 13
OTHER NORTH AMERICAN Fiber Model

Other North American model includes Mexico and Canada. As a member of NAFTA, Mexico has agreed to change its cotton policies. Under the agreement, Mexico is phasing out its 10 percent tariff on cotton over either 5 or 10 years, depending on the type of cotton. Upon enactment of the NAFTA on January 1, 1994, Mexico initially received a 10,000-ton tariff rate quota (TRQ). This quota grows by a 3-percent compound annual rate over the transition period. Under this policy, in-quota shipments enter the United States duty-free, while above-quota imports from Mexico faced an initial tariff equivalent of 26 percent, which is being phased out on a straight-line basis to zero over 10 years (FAS, 2002).

13.1. Mexico Model

13.1.1. Price Linkage

13.1.1.1. World to Domestic Soybean Price Linkage

LSBPRTMX = CMX10+CMX11*LOG(SBNAVUS*XRNUSMX)+CMX12*D96

Parameters	Estimates	Standard Error
CMX10	5.29	0.249
CMX11	0.49	0.061
CMX12	0.03	0.081
Adj. R-Square	0.805	
D-W	1.432	
Period of Fit	1970-2004	

13.1.1.1.2. World to Domestic Cotton Price Linkage

LCSPPRMX = CMX120+CMX121*(CTAHAUS*XRNUSMX)

Parameters	Estimates	Standard Error
CMX120	678.56	0.342
CMX121	9.64	0.261
Adj. R-Square	0.683	

D-W	1.721
Period of Fit	1970-2004

13.1.2. Cotton Supply

13.1.2..1. Cotton Acreage

LCTAHAIMX = CMX20+CMX21*(LAG(CTAHAIMX))
+MX22*(LAG(CSPPRMX/(**1**/**4***(WHPPRMX+C1PPRMX+SGPPRMX+SBPRTMX))))

Parameters	Estimates	Standard Error
CMX20	55.73	0.544
CMX21	0.62	0.288
CMX22	2.92	0.012
Adj. R-Square	0.615	
D-W	1.930	
Period of Fit	1970-2004	

13.1.2.2. Cotton Yield

CTYHAMX = CMX30+CMX31*(TRENDCN-**10**)+CMX32*(LAG(CSPPRMX/
(**1**/**4***(WHPPRMX+C1PPRMX+SGPPRMX+SBPRTMX)))

Parameters	Estimates	Standard Error
CMX30	0.73	0.141
CMX31	0.009	0.001
CMX32	0.003	0.031
Adj. R-Square	0.778	
D-W	1.662	
Period of Fit	1970-2004	

13.1.2.2. Cotton Production

CTPPRIMX =CTAHAIMX*CTYHAMX

13.1.3. Manmade Fiber Supply

13.1.3.1. *Man-made Fiber Production Capacity*

MMFCPMX = CMX130 +
CMX132*(**0.2***(LAG3(AOILP*XRNUSMX/GDDNCMX)+LAG4(AOILP*XRNUSMX/GDDN
CMX) + LAG5(AOILP*XRNUSMX/GDDNCMX) +LAG6(AOILP*XRNUSMX/GDDNCMX)
+ LAG7(AOILP*XRNUSMX/GDDNCMX)))
+ CMX134*(**0.2***(LAG3(USSSPC*XRNUSMX/GDDNCMX)

+LAG4(USSSPC*XRNUSMX/GDDNCMX)+LAG5(USSSPC*XRNUSMX/GDDNCMX)
+LAG6(USSSPC*XRNUSMX/GDDNCMX) +LAG7(USSSPC*XRNUSMX/GDDNCMX)))

Parameters	Estimates	Standard Error
CMX130	538.43	84.671
CMX132	-0.102	0.023
CMX134	0.150	0.043
Adj. R-Square	0.718	
D-W	1.558	
Period of Fit	1986-2004	

13.1.3.2. Man-made Fiber Capacity utilization

LMMFUPMX =CMX140+CMX141*
(USSSPC*XRNUSMX/GDDNCMX)+CMX142*(AOILP*XRNUSMX/GDDNCMX)

Parameters	Estimates	Standard Error
CMX140	1.14	0.100
CMX141	0.13	0.091
CMX142	-0.35	0.016
Adj. R-Square	0.684	
D-W	1.729	
Period of Fit	1986-2004	

13.1.3.3. Mexico Man-made Fiber Production

MMFPRMX =MMFUPMX*MMFCPMX

13.1.4. Fiber Mill Use

13.1.4.1. Per Capita Textile Consumption (in fiber equivalent)
LPFBPPNMX = CMX50 + CMX51*(LAG(CTFSHMX)*CSPPRMX/GDDNCMX+(**1**-
LAG(CTFSHMX))*USSSPC*XRNUSMX/GDDNCMX)+CMX52*(GDRNCMX/NNATTMX)
+CMX53*LAG(FBPPNMX/POP)

Parameters	Estimates	Standard Error
CMX50	-0.93	0.871
CMX51	-0.03	0.016
CMX52	0.20	0.108
CMX53	0.66	0.231
Adj. R-Square	0.610	
D-W	1.665	
Period of Fit	1970-2004	

13.1.4.2. Cotton Share

LCTFSHMX=cmx60+cmx61*((CTAHAUs+CTSSIAUs*100)/(USSSPC))
+cmx62*lag(CTFSHMx)

Parameters	Estimates	Standard Error
CMX60	-1.15	0.201
CMX61	-0.02	0.019
CMX62	0.02	0.437
Adj. R-Square	0.71	
D-W	2.103	
Period of Fit	1970-2004	

13.1.4.3. Cotton Mill Use

CTUMMX =FBPPNMX*CTFSHMX

13.1.4.4. Man-made Fiber Mill Use

MFCPCMX = (**1**-CTFSHMX-WLCSMX)*FBPPNMX

13.1.5. Fiber Ending Stock and Trade

13.1.5.1. Cotton Ending Stock

LCTCESMX = CMX100+CMX101*LOG(LAG(CTCESMX)+CTPPRIMX)+
CMX102*LOG(CSPPRMX/GDDNCMX)

Parameters	Estimates	Standard Error
CMX100	3.21	1.099
CMX101	0.34	0.023
CMX102	-0.0004	0.043
Adj. R-Square	0.719	
D-W	1.617	
Period of Fit	1970-2004	

13.1.5.2. Cotton Exports

LCTEXTCMX = CMX80+CMX81*(CTAHAUS*XRNUSMX/GDDNCMX)

Parameters	Estimates	Standard Error
CMX80	-9.61	0.165
CMX81	18.43	0.168
Adj. R-Square	0.729	

D-W	1.569
Period of Fit	1970-2004

11.1.5.3. Cotton Imports

CTIMTMX =-CTPPRIMX+CTUMMX+CTCESMX+CTEXTCMX-LAG(CTCESMX)

11.2. Canada Model

11.2.1. Man-made Fiber Supply

11.2.1.1. Man-made Fiber Production Capacity

LMMFCPCA = CCA60 + CCA62*(**0.2***(LAG3(AOILP*XRNUSCA/GDDNCCA)
+ LAG4(AOILP*XRNUSCA/GDDNCCA) + LAG5(AOILP*XRNUSCA/GDDNCCA)
+ LAG6(AOILP*XRNUSCA/GDDNCCA) + LAG7(AOILP*XRNUSCA/GDDNCCA)))
+ CCA64*(**0.2***(LAG3(USSSPC*XRNUSCA/GDDNCCA) +
LAG4(USSSPC*XRNUSCA/GDDNCCA)
+ LAG5(USSSPC*XRNUSCA/GDDNCCA) + LAG6(USSSPC*XRNUSCA/GDDNCCA)
+ LAG7(USSSPC*XRNUSCA/GDDNCCA)))

Parameters	Estimates	Standard Error
CCA60	211.48	50.330
CCA62	-0.133	0.203
CCA64	0.123	0.031
Adj. R-Square	0.891	
D-W	1.999	
Period of Fit	1979-2004	

13.2.1.2. Man-made Fiber Capacity Utilization

LMMFUPCA = CCA70 + CCA71* (USSSPC*XRNUSCA/GDDNCCA)
+CCA72*(AOILP*XRNUSCA/GDDNCCA)

Parameters	Estimates	Standard Error
CCA70	2.06	0.238
CCA71	0.71	0.112
CCA72	-3.94	1.016
Adj. R-Square	0.867	
D-W	2.074	
Period of Fit	1979-2004	

13.2.1.3. Man-made Fiber Production

MMFPRCA = MMFUPCA*MMFCPCA.

13.2.2. Fiber Mill Use

13.2.2.1. Per Capita Textile Consumption (in fiber equivalent)

LPFBCPCCA = CCA10+CCA11*(LAG(CTFSHCA)*CTAHAUS*XRNUSCA/GDDNCCA+(**1**-LAG(CTFSHCA))*USSSPC*XRNUSCA/GDDNCCA)+CCA12*(GDRNCCA/NNATTC)+CCA13*LAG(FBCPCCA/POP)

Parameters	Estimates	Standard Error
CCA10	8.69	3.043
CCA11	-1.51	0.022
CCA12	0.120	0.08
CCA13	0.39	0.015
Adj. R-Square	0.634	
D-W	2.126	
Period of Fit	1970-2004	

13.2.2.2. Cotton Share in Mill Use

LCTFSHCA = CCA20 + CCA21*(CTAHAUS/USSSPC)
+CCA22*(LAG(CTFSHCA))+CCA23*d77+CCA24*d78

Parameters	Estimates	Standard Error
CCA20	-2.28	0.304
CCA21	-0.10	0.013
CCA22	4.74	1.181
CCA23	0.21	0.105
CCA24	0.27	0.133
Adj. R-Square	0.708	
D-W	1.766	
Period of Fit	1970-2004	

13.2.2.3. Cotton Mill Use

CTUMCA = FBCPCCA*CTFSHCA

13*.2.2.4. Man-made Fiber Mill Use*

MFCPCCA = (**1**-CTFSHCA-WLCSCA)*FBCPCCA

13.2.3. Fiber Ending Stock and Trade

13.2.3.1. Cotton Ending Stock

LCTCESCA = CCA40 + CCA41*(CTAHAUS*XRNUSCA/(**100***GDDNCCA)) + CCA42*(LAG(CTCESCA)+ CTPPRICA)

Parameters	Estimates	Standard Error
CCA40	3.95	1.641
CCA41	-136.73	0.170
CCA42	0.71	0.137
Adj. R-Square	0.795	
D-W	1.789	
Period of Fit	1970-2004	

13.2.3.2. Cotton Imports

CTIMTCA = CTUMCA – CTPPRICA - LAG(CTCESCA) + CTCESCA + CTEXTCCA;

CHAPTER 14
MODEL VALIDATION

In this section, we present different statistics which cover various aspects of model evaluation, which are based on a simulation period from 1990 to 2002.

The MSE, its components, and Theil inequality coefficients are presented in Table 14.1. Based on the results, most of the bias and regression components' values are close to zero, indicating that the simulated values do not tend to be higher or lower than their actual values. The disturbance components for most variables are close to one, which indicates that most of the errors in the simulated values are associated with randomness in the actual data series. Most of the Theil's inequality coefficients are close to 0, which indicates the model performs well.

Table 14.1. Mean Square Error Decompositions and the Theil u-statistics

Talbe 2. Baseline Simulation Dynamic Simulation Statistics based on period 1992-2003

	MSE Decomposition Proportions					
Variable	Bias (UM)	Reg (UR)	Dist (UD)	Var (US)	Covar (UC)	Inequality Coefficient U
CTAHAUs	0.053	0.042	0.905	0.030	0.917	0.031
SBPRTAg	0.082	0.180	0.738	0.180	0.738	0.094
CTAHAIAg	0.059	0.020	0.921	0.140	0.801	0.054
CTYHAAg	0.000	0.000	1.000	0.090	0.910	0.033
CTPPRIAg	0.056	0.060	0.884	0.160	0.784	0.057
FBCPCAg	0.061	0.033	0.906	0.027	0.912	0.073
CTFSHAg	0.091	0.040	0.869	0.000	0.909	0.049
CTUMAg	0.091	0.020	0.889	0.000	0.909	0.052
CTEXTCAg	0.024	0.043	0.933	0.030	0.946	0.054
CTIMTAg	0.100	0.000	0.900	0.074	0.826	0.064
CTCESAg	0.150	0.059	0.791	0.043	0.807	0.146
CSPPRAg	0.085	0.150	0.765	0.130	0.785	0.057
MMFUPAg	0.000	0.000	1.000	0.040	0.960	0.045
MMFCPAg	0.100	0.030	0.870	0.090	0.810	0.122
MMFPRAg	0.100	0.000	0.900	0.170	0.730	0.084
MFCPCAg	0.072	0.024	0.904	0.030	0.898	0.021
CTAHAAu	0.040	0.026	0.934	0.070	0.890	0.162
CTYHAAu	0.130	0.110	0.760	0.040	0.830	0.034
CTPPRAu	0.049	0.026	0.925	0.110	0.841	0.169
FBPPNAu	0.010	0.084	0.906	0.000	0.990	0.072
CTFSHAu	0.058	0.090	0.852	0.038	0.904	0.104
CTUMIAu	0.044	0.130	0.826	0.170	0.786	0.131
CTCESAu	0.022	0.020	0.958	0.100	0.878	0.197
CTEXTAu	0.051	0.028	0.921	0.170	0.779	0.149
CTPDCAu	0.052	0.045	0.903	0.033	0.915	0.028
MMFUPAu	0.130	0.150	0.720	0.020	0.850	0.102
MMFCPAu	0.063	0.000	0.937	0.034	0.903	0.110
MMFPRAu	0.045	0.060	0.895	0.000	0.955	0.151
MFCPCAu	0.035	0.055	0.910	0.029	0.936	0.122

SBPRTBr	0.074	0.026	0.900	0.026	0.900	0.099
SJPPSBr	0.070	0.130	0.800	0.089	0.841	0.089
CTAHAIBr	0.075	0.000	0.925	0.010	0.915	0.089
CTYHABr	0.051	0.080	0.869	0.030	0.919	0.090
CTPPRBr	0.067	0.024	0.909	0.170	0.763	0.192
FBCPCBr	0.010	0.096	0.894	0.082	0.908	0.181
CTFSHBr	0.073	0.160	0.767	0.025	0.902	0.068
CTUMBr	0.110	0.088	0.802	0.075	0.815	0.023
CTEXTCBr	0.010	0.098	0.892	0.081	0.909	0.089
CTCESBr	0.080	0.082	0.838	0.069	0.851	0.022
CSPPRBr	0.010	0.056	0.934	0.020	0.970	0.030
MMFUPBr	0.000	0.082	0.918	0.170	0.830	0.110
MMFCPBr	0.024	0.068	0.908	0.021	0.955	0.106
MMFPRBr	0.180	0.078	0.742	0.047	0.773	0.145
MFCPCBr	0.032	0.037	0.931	0.180	0.788	0.141
RCPBr	0.160	0.028	0.812	0.044	0.796	0.127
CTFSHCa	0.055	0.030	0.915	0.026	0.919	0.100
FBCPCCa	0.180	0.150	0.670	0.033	0.787	0.029
CTUMCa	0.053	0.029	0.918	0.042	0.905	0.124
CTCESCa	0.030	0.000	0.970	0.070	0.900	0.034
CTIMTca	0.047	0.200	0.753	0.044	0.909	0.145
MMFUPCa	0.010	0.130	0.860	0.061	0.929	0.068
MMFCPCa	0.060	0.100	0.840	0.040	0.900	0.071
MMFPRCa	0.065	0.030	0.905	0.170	0.765	0.083
MFCPCCa	0.030	0.020	0.950	0.010	0.960	0.026
RIPRTCN	0.200	0.023	0.777	0.020	0.780	0.129
SBPRTCN	0.030	0.038	0.932	0.000	0.970	0.093
CTPRTCn	0.075	0.140	0.785	0.060	0.865	0.025
CTPCUCn	0.070	0.050	0.880	0.000	0.930	0.023
PLPRTCN	0.110	0.057	0.833	0.120	0.770	0.193
CTANWCn	0.082	0.140	0.778	0.010	0.908	0.043
CTAYLCn	0.070	0.030	0.900	0.000	0.930	0.145
CTAYZCn	0.076	0.000	0.924	0.040	0.884	0.186
CTAOTCn	0.027	0.010	0.963	0.050	0.923	0.057
CTYNWCn	0.048	0.028	0.924	0.070	0.882	0.108
CTYYLCn	0.000	0.049	0.951	0.089	0.911	0.095
CTYYZCn	0.180	0.000	0.820	0.030	0.790	0.059
CTYOTCn	0.000	0.000	1.000	0.040	0.960	0.127

CTPNWCn	0.082	0.040	0.878	0.060	0.858	0.051
CTPYLCn	0.025	0.063	0.912	0.022	0.953	0.020
CTPYZCn	0.080	0.020	0.900	0.010	0.910	0.020
CTPOTCn	0.190	0.020	0.790	0.058	0.752	0.063
CTAHAICn	0.088	0.050	0.862	0.020	0.892	0.195
CTPPRICn	0.073	0.021	0.906	0.050	0.877	0.025
CTIMTCn	0.024	0.030	0.946	0.090	0.886	0.023
CTEXTcn	0.094	0.060	0.846	0.020	0.886	0.080
CTUMCn	0.088	0.060	0.852	0.020	0.892	0.033
CTCESCn	0.060	0.024	0.916	0.000	0.940	0.057
FBUPCCn	0.084	0.030	0.886	0.110	0.806	0.056
CTFSHCn	0.090	0.020	0.890	0.000	0.910	0.024
SNCPCn	0.030	0.042	0.928	0.047	0.923	0.058
SNUPCn	0.010	0.070	0.920	0.020	0.970	0.022
SNPRCn	0.025	0.053	0.922	0.058	0.917	0.072
CLCPCn	0.080	0.010	0.910	0.080	0.840	0.051
CLUPCn	0.060	0.073	0.867	0.025	0.915	0.059
CLPRCn	0.000	0.030	0.970	0.190	0.810	0.071
MFCPCCn	0.078	0.020	0.902	0.180	0.742	0.074
TXFBCCn	0.084	0.110	0.806	0.160	0.756	0.040
TXFBECn	0.060	0.110	0.830	0.070	0.870	0.034
WLCSCn	0.034	0.070	0.896	0.020	0.946	0.122
TXPIDCn	0.045	0.042	0.913	0.039	0.916	0.036
MMFUPEc	0.084	0.100	0.816	0.010	0.906	0.022
MMFCPEc	0.062	0.034	0.904	0.038	0.900	0.191
MMFPREc	0.094	0.030	0.876	0.000	0.906	0.036
CSPPREG	0.055	0.043	0.902	0.032	0.913	0.038
CTAHAIEG	0.074	0.040	0.886	0.010	0.916	0.126
CTYHAEG	0.081	0.120	0.799	0.010	0.909	0.148
CTPPREG	0.087	0.030	0.883	0.000	0.913	0.025
CTEXTEG	0.081	0.170	0.749	0.090	0.829	0.062
FBCPCEG	0.000	0.130	0.870	0.045	0.955	0.025
CTFSHEG	0.070	0.068	0.862	0.050	0.880	0.029
CTUMIEG	0.060	0.070	0.870	0.130	0.810	0.027
CTCESEG	0.070	0.010	0.920	0.049	0.881	0.022
CTIMTEg	0.055	0.010	0.935	0.130	0.815	0.032
MMFUPEg	0.010	0.000	0.990	0.090	0.900	0.080
MMFCPEg	0.080	0.200	0.720	0.089	0.831	0.182

MMFPReg	0.025	0.062	0.913	0.170	0.805	0.020
CTAHAIEu	0.088	0.070	0.842	0.110	0.802	0.182
CTYHAEu	0.010	0.050	0.940	0.044	0.946	0.029
CTPPREu	0.085	0.080	0.835	0.130	0.785	0.189
CTIMTEu	0.010	0.000	0.990	0.053	0.937	0.071
FBCPCEr	0.010	0.190	0.800	0.010	0.980	0.018
CTFSHEu	0.000	0.180	0.820	0.061	0.939	0.034
CTUMIEu	0.000	0.000	1.000	0.028	0.972	0.042
CTCESEu	0.068	0.022	0.910	0.050	0.882	0.119
CTEXTEu	0.064	0.160	0.776	0.000	0.936	0.021
PLPRTEu	0.130	0.081	0.789	0.058	0.812	0.030
MMFUPEu	0.060	0.040	0.900	0.010	0.930	0.012
MMFCPEu	0.170	0.061	0.769	0.030	0.800	0.045
MMFPREu	0.200	0.074	0.726	0.060	0.740	0.051
MFCPCEr	0.140	0.100	0.760	0.042	0.818	0.021
CTAHAIFs	0.066	0.034	0.900	0.190	0.744	0.035
CTYHAFs	0.084	0.060	0.856	0.100	0.816	0.164
CTPPRFs	0.072	0.027	0.901	0.090	0.838	0.048
FBCPCFs	0.000	0.082	0.918	0.061	0.939	0.055
CTFSHFs	0.072	0.160	0.768	0.030	0.898	0.026
CTUMIFs	0.065	0.190	0.745	0.080	0.855	0.024
CTCESFs	0.054	0.021	0.925	0.010	0.936	0.109
CTEXTFs	0.072	0.028	0.900	0.080	0.848	0.054
MMFUPFs	0.046	0.160	0.794	0.000	0.954	0.158
MMFCPFs	0.052	0.010	0.938	0.047	0.901	0.196
MMFPRFs	0.081	0.120	0.799	0.010	0.909	0.030
SJPPSIN	0.026	0.000	0.974	0.000	0.974	0.030
PPLRTIN	0.026	0.030	0.944	0.028	0.946	0.164
CTPPDIN	0.037	0.049	0.914	0.160	0.803	0.022
CTAI1IN	0.039	0.000	0.961	0.049	0.912	0.083
CTAI2IN	0.030	0.058	0.912	0.068	0.902	0.049
CTAI3IN	0.026	0.000	0.974	0.056	0.918	0.075
CTAI4IN	0.000	0.000	1.000	0.060	0.940	0.126
CTAHAIN	0.043	0.070	0.887	0.052	0.905	0.052
CTYD1IN	0.025	0.043	0.932	0.045	0.930	0.137
CTYD2IN	0.010	0.021	0.969	0.070	0.920	0.085
CTYD3IN	0.030	0.050	0.920	0.047	0.923	0.160
CTYD4IN	0.020	0.032	0.948	0.000	0.980	0.043

CTPD1IN	0.010	0.046	0.944	0.080	0.910	0.143
CTPD2IN	0.130	0.010	0.860	0.024	0.846	0.104
CTPD3IN	0.070	0.090	0.840	0.022	0.908	0.138
CTPD4IN	0.020	0.093	0.887	0.064	0.916	0.058
CTPPRIN	0.086	0.010	0.904	0.020	0.894	0.146
CTCESIN	0.069	0.070	0.861	0.070	0.861	0.193
FBPPNIN	0.091	0.090	0.819	0.090	0.819	0.022
CTFSHIN	0.060	0.052	0.888	0.030	0.910	0.037
CTUMIIN	0.087	0.120	0.793	0.110	0.803	0.024
CTIMTIN	0.130	0.028	0.842	0.051	0.819	0.024
CTEXTIN	0.091	0.090	0.819	0.080	0.829	0.098
CTPPSIN	0.110	0.059	0.831	0.070	0.820	0.185
MMFUPIn	0.000	0.072	0.928	0.120	0.880	0.070
MMFCPIn	0.058	0.140	0.802	0.042	0.900	0.024
MMFPRIn	0.057	0.100	0.843	0.140	0.803	0.023
MFCPCIN	0.070	0.160	0.770	0.070	0.860	0.021
FBCPCJp	0.020	0.060	0.920	0.039	0.941	0.020
MFBCJp	0.080	0.046	0.874	0.140	0.780	0.075
CTFSHJp	0.050	0.190	0.760	0.060	0.890	0.072
CTUMJp	0.080	0.036	0.884	0.080	0.840	0.118
CTCESJp	0.090	0.000	0.910	0.020	0.890	0.027
CTIMTJp	0.150	0.035	0.815	0.100	0.750	0.114
FBTDJp	0.100	0.048	0.852	0.130	0.770	0.124
MMFUPJp	0.027	0.025	0.948	0.000	0.973	0.037
MMFCPJp	0.070	0.030	0.900	0.090	0.840	0.020
MMFPRJp	0.027	0.050	0.923	0.110	0.863	0.046
MFCPCJp	0.028	0.037	0.935	0.110	0.862	0.072
CTAHAILa	0.092	0.010	0.898	0.060	0.848	0.029
CTYHALa	0.096	0.020	0.884	0.020	0.884	0.186
CTPPRILa	0.097	0.000	0.903	0.020	0.883	0.044
FBCPCLa	0.036	0.060	0.904	0.190	0.774	0.024
CTFSHLa	0.052	0.180	0.768	0.040	0.908	0.076
CTUMLa	0.023	0.075	0.902	0.055	0.922	0.187
CTEXTCLa	0.083	0.150	0.767	0.060	0.857	0.057
CTIMTLa	0.034	0.047	0.919	0.110	0.856	0.190
CTCESLa	0.068	0.031	0.901	0.140	0.792	0.180
MMFUPLa	0.070	0.061	0.869	0.170	0.760	0.059
MMFCPLa	0.043	0.080	0.877	0.037	0.920	0.079

MMFPRLa	0.046	0.027	0.927	0.020	0.934	0.102
MFCPCLa	0.045	0.052	0.903	0.036	0.919	0.031
SBPRTMx	0.140	0.010	0.850	0.040	0.820	0.058
CTAHAIMx	0.083	0.160	0.757	0.130	0.787	0.081
CTYHAMx	0.077	0.000	0.923	0.020	0.903	0.130
CTPPRIMx	0.080	0.200	0.720	0.180	0.740	0.086
FBPPNMx	0.084	0.130	0.786	0.040	0.876	0.091
CTFSHMx	0.200	0.080	0.720	0.033	0.767	0.093
CTUMMx	0.082	0.130	0.788	0.020	0.898	0.091
CTEXTCMx	0.079	0.110	0.811	0.030	0.891	0.043
CTIMTMx	0.081	0.190	0.729	0.120	0.799	0.099
CTCESMx	0.050	0.000	0.950	0.024	0.926	0.193
CSPPRMx	0.087	0.130	0.783	0.110	0.803	0.093
MMFUPMx	0.010	0.020	0.970	0.078	0.912	0.038
MMFCPMx	0.086	0.000	0.914	0.140	0.774	0.164
MMFPRMx	0.088	0.020	0.892	0.100	0.812	0.164
MFCPCMx	0.085	0.140	0.775	0.080	0.835	0.091
CTAHAOa	0.041	0.070	0.889	0.020	0.939	0.098
CTYHAOa	0.037	0.050	0.913	0.032	0.931	0.035
CTPPROa	0.051	0.100	0.849	0.010	0.939	0.118
CTIMTOa	0.058	0.026	0.916	0.020	0.922	0.198
FBPPNOa	0.060	0.050	0.890	0.170	0.770	0.029
CTFSHOa	0.059	0.022	0.919	0.000	0.941	0.150
CTUMIOa	0.052	0.031	0.917	0.020	0.928	0.168
CTCESOa	0.051	0.010	0.939	0.150	0.799	0.167
CTEXTOa	0.039	0.046	0.915	0.020	0.941	0.152
MMFUPOa	0.050	0.150	0.800	0.000	0.950	0.053
MMFCPOa	0.050	0.000	0.950	0.048	0.902	0.020
MMFPROa	0.050	0.020	0.930	0.032	0.918	0.023
MFCPCOa	0.060	0.020	0.920	0.000	0.940	0.067
CTIMTOe	0.026	0.068	0.906	0.047	0.927	0.033
CTUMIOe	0.025	0.069	0.906	0.051	0.924	0.030
CTCESOe	0.020	0.032	0.948	0.040	0.940	0.143
CTAHAIOf	0.047	0.130	0.823	0.025	0.928	0.047
CTYHAOf	0.034	0.023	0.943	0.030	0.936	0.087
CTPPROf	0.050	0.050	0.900	0.050	0.900	0.059
CTEXTOf	0.063	0.040	0.897	0.140	0.797	0.091
FBCPCOf	0.010	0.092	0.898	0.071	0.919	0.039

CTFSHOf	0.073	0.190	0.737	0.150	0.777	0.057
CTUMIOf	0.075	0.050	0.875	0.000	0.925	0.067
CTCESOf	0.078	0.120	0.802	0.050	0.872	0.031
CTIMTOf	0.060	0.092	0.848	0.074	0.866	0.025
MMFUPof	0.000	0.041	0.959	0.088	0.912	0.047
MMFCPof	0.037	0.059	0.904	0.043	0.920	0.029
MMFPRof	0.037	0.060	0.903	0.039	0.924	0.030
MFCPCtf	0.036	0.031	0.933	0.000	0.964	0.093
CTAHAIOm	0.028	0.031	0.941	0.040	0.932	0.074
CTYHAOm	0.057	0.026	0.917	0.039	0.904	0.073
CTPPROm	0.080	0.080	0.840	0.000	0.920	0.047
CTEXTOm	0.061	0.030	0.909	0.080	0.859	0.179
FBCPCOm	0.035	0.070	0.895	0.120	0.845	0.035
CTFSHOm	0.000	0.130	0.870	0.047	0.953	0.052
CTUMOm	0.028	0.028	0.944	0.080	0.892	0.063
CTCESOm	0.090	0.020	0.890	0.040	0.870	0.104
CTIMTOm	0.081	0.190	0.729	0.170	0.749	0.067
MMFUPOm	0.085	0.000	0.915	0.020	0.895	0.092
MMFCPOm	0.026	0.080	0.894	0.063	0.911	0.191
MMFPROm	0.052	0.000	0.948	0.024	0.924	0.025
MFCPCMe	0.086	0.070	0.844	0.040	0.874	0.156
RIPRIPK	0.010	0.010	0.980	0.023	0.967	0.057
SJPRIPK	0.057	0.030	0.913	0.170	0.773	0.021
CTAHAPK	0.084	0.070	0.846	0.010	0.906	0.074
CTYHAPK	0.034	0.040	0.926	0.041	0.925	0.054
CTPPRPK	0.074	0.010	0.916	0.070	0.856	0.115
FBPPNPK	0.089	0.100	0.811	0.090	0.821	0.029
CTFSHPK	0.022	0.000	0.978	0.050	0.928	0.016
CTUMIPK	0.091	0.090	0.819	0.070	0.839	0.030
CTIMTPK	0.089	0.110	0.801	0.100	0.811	0.088
CTEXTPK	0.048	0.021	0.931	0.060	0.892	0.046
CTCESPK	0.052	0.010	0.938	0.150	0.798	0.021
CTPRIPK	0.049	0.043	0.908	0.100	0.851	0.022
MMFUPPk	0.110	0.000	0.890	0.150	0.740	0.073
MMFCPPk	0.033	0.063	0.904	0.053	0.914	0.026
MMFPRPk	0.046	0.052	0.902	0.049	0.905	0.026
MFCPCPK	0.180	0.059	0.761	0.034	0.786	0.030
FBCPCRu	0.097	0.010	0.893	0.020	0.883	0.021

CTFSHRu	0.028	0.140	0.832	0.070	0.902	0.140
CTUMRu	0.089	0.030	0.881	0.000	0.911	0.029
CTCESRu	0.052	0.045	0.903	0.032	0.916	0.048
CTIMTRu	0.094	0.010	0.896	0.000	0.906	0.027
MFPPCKR	0.010	0.071	0.919	0.190	0.800	0.095
STPPCKR	0.080	0.089	0.831	0.052	0.868	0.027
CTPSDKR	0.150	0.190	0.660	0.000	0.850	0.100
FBPPNKR	0.031	0.140	0.829	0.043	0.926	0.106
CTFSHKR	0.044	0.010	0.946	0.170	0.786	0.094
CTUMKR	0.032	0.030	0.938	0.160	0.808	0.027
CTCESKR	0.049	0.180	0.771	0.020	0.931	0.079
CTIMTKR	0.130	0.021	0.849	0.010	0.860	0.045
MMFUPKR	0.040	0.067	0.893	0.170	0.790	0.089
MMFCPKR	0.081	0.020	0.899	0.160	0.759	0.035
MMFPRKR	0.088	0.030	0.882	0.020	0.892	0.034
MFCPCKR	0.026	0.100	0.874	0.038	0.936	0.194
WHPPSTk	0.170	0.075	0.755	0.069	0.761	0.023
CORNPTk	0.200	0.065	0.735	0.060	0.740	0.156
CTAHAITk	0.010	0.180	0.810	0.030	0.960	0.047
CTYHATk	0.050	0.130	0.820	0.080	0.870	0.048
CTPPRITk	0.040	0.029	0.931	0.030	0.930	0.086
FBCPCTk	0.086	0.140	0.774	0.130	0.784	0.032
CTFSHTk	0.052	0.000	0.948	0.120	0.828	0.073
CTUMTk	0.082	0.170	0.748	0.150	0.768	0.027
CTEXTCTk	0.059	0.080	0.861	0.025	0.916	0.033
CTIMTTk	0.076	0.023	0.901	0.190	0.734	0.055
CTCESTk	0.064	0.000	0.936	0.028	0.908	0.041
CSPPRTk	0.051	0.043	0.906	0.041	0.908	0.157
MMFUPTk	0.044	0.000	0.956	0.050	0.906	0.025
MMFCPTk	0.160	0.066	0.774	0.055	0.785	0.097
MMFPRTk	0.023	0.057	0.920	0.044	0.933	0.112
PLPRTTw	0.010	0.056	0.934	0.170	0.820	0.180
FBCPCTw	0.030	0.000	0.970	0.150	0.820	0.098
CTFSHTw	0.040	0.130	0.830	0.020	0.940	0.148
CTUMTw	0.052	0.043	0.905	0.025	0.923	0.156
CTCESTw	0.000	0.047	0.953	0.010	0.990	0.022
CTIMTTw	0.048	0.041	0.911	0.090	0.862	0.175
MMFUPTw	0.042	0.025	0.933	0.041	0.917	0.040

MMFCPTw	0.079	0.090	0.831	0.021	0.900	0.026
MMFPRTw	0.086	0.060	0.854	0.050	0.864	0.022
MFCPCTw	0.010	0.000	0.990	0.110	0.880	0.104
CTAHAIWa	0.070	0.026	0.904	0.023	0.907	0.174
CTPPRWa	0.069	0.028	0.903	0.024	0.907	0.175
CTEXTWa	0.081	0.180	0.739	0.170	0.749	0.198
CTCESWa	0.028	0.060	0.912	0.048	0.924	0.025
CTUMIWa	0.086	0.140	0.774	0.130	0.784	0.073
CTPPSwa	0.068	0.025	0.907	0.150	0.782	0.197
CSPPRUz	0.046	0.053	0.901	0.052	0.902	0.047
CTAHAIUz	0.052	0.039	0.909	0.000	0.948	0.076
CTYHAUz	0.054	0.180	0.766	0.030	0.916	0.047
CTPPRIUz	0.057	0.026	0.917	0.000	0.943	0.117
FBCPCUz	0.043	0.054	0.903	0.036	0.921	0.032
CTFSHUz	0.022	0.000	0.978	0.037	0.941	0.039
CTUMUz	0.042	0.055	0.903	0.037	0.921	0.031
CTEXTCUz	0.160	0.043	0.797	0.000	0.840	0.132
CTCESUz	0.025	0.061	0.914	0.050	0.925	0.021
CTEXTUs	0.110	0.030	0.860	0.080	0.810	0.124
CTIMTUs	0.150	0.040	0.810	0.070	0.780	0.064
SNCCPUs	0.042	0.000	0.958	0.120	0.838	0.026
SNUCPUs	0.030	0.180	0.790	0.056	0.914	0.023
SNPPRUs	0.020	0.100	0.880	0.160	0.820	0.029
CLCCPUs	0.090	0.030	0.880	0.055	0.855	0.132
CLUCPUs	0.000	0.120	0.880	0.040	0.960	0.044
CLPPRUs	0.090	0.031	0.879	0.075	0.835	0.121
USRSPC	0.000	0.099	0.901	0.087	0.913	0.030
EXMMFUs	0.030	0.093	0.877	0.023	0.947	0.176
IMMMFUs	0.087	0.060	0.853	0.020	0.893	0.061
USSSPC	0.050	0.091	0.859	0.072	0.878	0.028
MMMDUs	0.091	0.080	0.829	0.050	0.859	0.129
MMDDUs	0.084	0.110	0.806	0.030	0.886	0.136
CTMPUs	0.049	0.048	0.903	0.039	0.912	0.030
CTMPPUs	0.048	0.049	0.903	0.040	0.912	0.030
WCAPPUs	0.057	0.180	0.763	0.040	0.903	0.176
CTSWPUs	0.020	0.079	0.901	0.029	0.951	0.055
APOUTPUs	0.036	0.061	0.903	0.053	0.911	0.032
BWOUTPUs	0.021	0.069	0.910	0.050	0.929	0.025

CFOUTPUs	0.071	0.180	0.749	0.140	0.789	0.012
CRIPPUs	0.041	0.140	0.819	0.027	0.932	0.010
BWIPPUs	0.021	0.160	0.819	0.036	0.943	0.010
WLPRUs	0.052	0.039	0.909	0.021	0.927	0.033
GWLPAu	0.030	0.067	0.903	0.040	0.930	0.022
CTFMPUs	0.050	0.047	0.903	0.038	0.912	0.030
CLDCNUS	0.078	0.120	0.802	0.020	0.902	0.029
SNDCNUs	0.087	0.100	0.813	0.070	0.843	0.124
MFRSUs	0.071	0.000	0.929	0.150	0.779	0.044
CTCESUs	0.051	0.160	0.789	0.030	0.919	0.021
CTLPUd	0.048	0.049	0.903	0.039	0.913	0.031
EPMUd	0.040	0.057	0.903	0.044	0.916	0.027
ESPUd1	0.039	0.056	0.905	0.034	0.927	0.027
ESPUd	0.040	0.056	0.904	0.038	0.922	0.028
CTPCUd	0.039	0.000	0.961	0.036	0.925	0.079
CTPAUd	0.080	0.052	0.868	0.030	0.890	0.086
CTHAUd	0.130	0.049	0.821	0.030	0.840	0.088
CTYDUd	0.033	0.000	0.967	0.056	0.911	0.075
CTPDUd	0.040	0.150	0.810	0.090	0.870	0.115
CTNRUd	0.041	0.054	0.905	0.029	0.930	0.048
CTLPUse	0.042	0.054	0.904	0.043	0.915	0.029
EPMUse	0.038	0.060	0.902	0.048	0.914	0.025
ESPUse1	0.036	0.058	0.906	0.036	0.928	0.026
ESPUse	0.035	0.061	0.904	0.040	0.925	0.027
CTPCUse	0.040	0.080	0.880	0.063	0.897	0.053
CTNRUse	0.030	0.063	0.907	0.033	0.937	0.044
CTPAUse	0.069	0.000	0.931	0.080	0.851	0.023
CTHAUse	0.071	0.000	0.929	0.080	0.849	0.023
CTYDUse	0.000	0.130	0.870	0.035	0.965	0.078
CTPDUse	0.071	0.000	0.929	0.080	0.849	0.023
CTLPUsw	0.055	0.042	0.903	0.034	0.911	0.033
EPMUsw	0.046	0.052	0.902	0.037	0.917	0.028
CCPUsw	.	.	.	.	.	.
ESPUsw1	0.044	0.051	0.905	0.031	0.925	0.029
ESPUsw	0.044	0.051	0.905	0.032	0.924	0.031
CTPCUswi	0.045	0.010	0.945	0.034	0.921	0.100
CTNRUswi	0.046	0.049	0.905	0.024	0.930	0.044
CTPAUswi	0.049	0.045	0.906	0.180	0.771	0.156

CTHAUswi	0.045	0.024	0.931	0.010	0.945	0.145
CTYDUswi	0.053	0.000	0.947	0.036	0.911	0.098
CTPDUswi	0.060	0.023	0.917	0.010	0.930	0.114
CTNRUswd	0.047	0.050	0.903	0.026	0.927	0.057
CTPAUswd	0.051	0.040	0.909	0.020	0.929	0.087
CTHAUswd	0.047	0.090	0.863	0.180	0.773	0.163
CTYDUswd	0.030	0.040	0.930	0.049	0.921	0.052
CTPCUswd	0.046	0.020	0.934	0.033	0.921	0.101
CTPDUswd	0.044	0.200	0.756	0.140	0.816	0.179
CTLPUw	0.027	0.068	0.905	0.055	0.918	0.025
EPMUw	0.030	0.068	0.902	0.057	0.913	0.022
ESPUw1	0.029	0.064	0.907	0.040	0.931	0.022
ESPUw	0.028	0.067	0.905	0.045	0.927	0.023
CTPCUw	0.080	0.050	0.870	0.066	0.854	0.058
CTNRUw	0.026	0.068	0.906	0.034	0.940	0.041
CTPAUw	0.025	0.067	0.908	0.140	0.835	0.151
CTHAUw	0.024	0.067	0.909	0.140	0.836	0.150
CTYDUw	0.060	0.080	0.860	0.030	0.910	0.111
CTPDUw	0.028	0.066	0.906	0.000	0.972	0.194
CTHAUs	0.000	0.044	0.956	0.000	1.000	0.068
CTELSUs	0.052	0.035	0.913	0.200	0.748	0.161
ELSCTPUs	0.047	0.028	0.925	0.010	0.943	0.028
ULCTUs	0.060	0.048	0.892	0.010	0.930	0.075
CTPPRUs	0.080	0.047	0.873	0.010	0.910	0.075
WHCUw	0.041	0.010	0.949	0.100	0.859	0.085
SBCUse	0.070	0.023	0.907	0.050	0.880	0.037
CNCUse	0.100	0.045	0.855	0.150	0.750	0.033
SGCUsw	0.120	0.080	0.800	0.050	0.830	0.053
WHCUsw	0.031	0.020	0.949	0.130	0.839	0.042
RCCUd	0.029	0.041	0.930	0.000	0.971	0.086
SBCUd	0.000	0.064	0.936	0.060	0.940	0.029
CTUMIUs	0.050	0.056	0.894	0.039	0.911	0.040
CTFPIUS	0.022	0.075	0.903	0.059	0.919	0.045
TCFCUs	0.010	0.010	0.980	0.050	0.940	0.014
CFNMUs	0.200	0.010	0.790	0.000	0.800	0.028
MFNTUs	0.086	0.000	0.914	0.000	0.914	0.195
TMFCUs	0.089	0.020	0.891	0.000	0.911	0.079
MFFPIUS	0.089	0.100	0.811	0.060	0.851	0.176

Appendix

Variable Names and Their Definitions

Country	Variable means	Unit	Data Source	Variables
	Trend		Self	TRENDCn
Argentina	MMF production capacity	1000mt	fiber Organ	MMFCPAg
Argentina	MMF capacity utilization	1000mt	fiber Organ	MMFUPAg
Argentina	MMF production	1000mt	fiber Organ	MMFPRAg
Argentina	other fiber consumption share		Self	WLCSAg
A-index	Cotton A-index price	Cents/lb	cotton and wool situation and outlook,2001	CTAHAUs
ALGERIA	Exchange rate	lc/$	FAPRI	XRNUSOf
Argentina	Cotton area	1000ha	PSD	CTAHAIAg
Argentina	yield	mt/ha	PSD	CTYHAAg
Argentina	production	1000mt	PSD	CTPPRIAg
Argentina	Imports	1000mt	PSD	CTIMTAg
Argentina	Exports	1000mt	PSD	CTEXTCAg
Argentina	USE Dom. Co	1000mt	PSD	CTUMAg
Argentina	Ending Stock	1000mt	PSD	CTCESAg
Argentina	Soybean price	Pesos/mt	FAPRI	SBPRTAg
Argentina	fiber consumption	1000mt	fiber Organ	FBCPCAg
Argentina	cotton consumption share		Self	CTFSHAg
Argentina	Seedcotton price	LC/mt	FAO	CSPPRAg
Argentina	MMF consumption	1000mt	fiber Organ	MFCPCAg
Argentina	exchange rate	Pesos/$	FAPRI	XRNUSAg
Argentina	Real GDP	Billion pesos	FAPRI	GDRNCAg
Argentina	Population	million	FAPRI	NNATTAg
Argentina	GDP deflator		FAPRI	GDDNCAg

Argentina	cotton Export rebate		FAS	CTEXTAg
Argentina	cotton Import duties		FAS	CTDQICAg
Argentina	wheat price	Pesos/mt	FAPRI	WHPPSAg
AU	Au area	1000ha	PSD	CTAHAAu
AU	Au yield	mt/ha	PSD	CTYHAAu
AU	Au production	1000mt	PSD	CTPPRAu
AU	Au consumption	10000mt	PSD	CTUMIAu
AU	Au ending stock	1000mt	PSD	CTCESAu
AU	Au export	1000mt	PSD	CTEXTAu
AU	Cotton farm price	Au$/lb	Seth	CTPDCAu
AU	Total fiber consumption	1000mt	Fiber organ	FBPPNAu
AU	Cotton share	cotton consumption share	Self	CTFSHAu
AU	MMF production capacity	1000mt	fiber Organ	MMFCPAu
AU	MMF capacity utilization	1000mt	fiber Organ	MMFUPAu
AU	MMF production	1000mt	fiber Organ	MMFPRAu
AU	MMF consumption	1000mt	fiber Organ	MFCPCAu
AU	GDP Billions	Au $	FAPRI	GDRNCAu
AU	Population	millions	FAPRI	NNATTAu
AU	Exchange Rate	au /us$	FAPRI	XRNUSAu
AU	GDP deflator		FAPRI	GDDNCAu
AU	Australian wool price	Ac/kg	FAPRI	WOPPDAu
AU	Import tariff		FAS	CTDQTAu
AU	Sorghum farm price	Ac/kg	FAPRI	SHPFRAu
AU	TREND-au		Self	TRENDAu
AU	Au Cotton import	1000mt	PSD	CTIMTAu
AU	Australian cotton export return		Meyers Seth Dissertation	CFER1Au
AU	Cotton average unit	Ac/kg	Meyers Seth Dissertation	CTPRTAu
Australia	Other fiber consumption share		Self	WLCSAu
Brazil	Cotton area	1000ha	PSD	CTAHAIBr
Brazil	Cotton yield	mt/ha	PSD	CTYHABr
Brazil	Cotton production	1000mt	PSD	CTPPRBr
Brazil	Cotton import	1000mt	PSD	CTIMTBr

Brazil	Cotton export	1000mt	PSD	CTEXTCBr
Brazil	USE Dom. Co	1000mt	PSD	CTUMBr
Brazil	Ending Stock	1000mt	PSD	CTCESBr
Brazil	Soybean price		FAPRI	SBPRTBr
Brazil	Sugarcane price		FAPRI	SJPPSBr
Brazil	Total fiber consumption	1000mt	fiber Organ	FBCPCBr
Brazil	Cotton consumption share		Self	CTFSHBr
Brazil	Seedcotton price		FAO	CSPPRBr
Brazil	MMF production capacity	1000mt	fiber Organ	MMFCPBr
Brazil	MMF capacity utilization	1000mt	fiber Organ	MMFUPBr
Brazil	MMF production	1000mt	fiber Organ	MMFPRBr
Brazil	MMF consumption	1000mt	fiber Organ	MFCPCBr
Brazil	other fiber consumption share		Self	WLCSBr
Brazil	Real GDP	Billions Reais	FAPRI	GDRNCBr
Brazil	Population	millions	FAPRI	NNATTBr
Brazil	Exchange rate	Reais/$	FAPRI	XRNUSBr
Brazil	GDP deflator		FAPRI	GDDNCBr
Brazil	Corn price		FAPRI	CORNPBr
Brazil	Cotton export value added tax		FAS	CTEXTBr
Brazil	Cotton tariff		FAS	CTDQICBr
British	Australia greasy wool		ERS	GWLPAu
Canada	Cotton Imports		PSD	CTIMTca
Canada	USE Dom. Co		PSD	CTUMCa
Canada	Ending Stock		PSD	CTCESCa
Canada	Total fiber consumption	1000mt	fiber Organ	FBCPCCa
Canada	Cotton consumption share		Self	CTFSHCa
Canada	MMF production capacity	1000mt	fiber Organ	MMFCPCa
Canada	MMF capacity utilization	1000mt	fiber Organ	MMFUPCa
Canada	MMF production	1000mt	fiber Organ	MMFPRCa
Canada	MMF consumption	1000mt	fiber Organ	MFCPCCa
Canada	other fiber consumption share		Self	WLCSCa
Canada	Exchange rate	CND$/USD	FAPRI	XRNUSCa

		$ Billions		
Canada	Real GDP	CND	FAPRI	GDRNCCa
Canada	GDP deflator		FAPRI	GDDNCCa
Canada	population	Millions	FAPRI	NNATTCa
Canada	Tariff		FAS	CTDQICCa
Canada	Cotton production		PSD	CTPPRICa
Canada	Cotton export		PSD	CTEXTCCa
China	Harvested area		PSD	CTAHAICn
China	Production		PSD	CTPPRICn
China	Imports		PSD	CTIMTCn
China	Exports		PSD	CTEXTcn
China	USE Dom. Co		PSD	CTUMCn
China	Ending Stock		PSD	CTCESCn
China	Rice price	Yuan/mt	FAPRI	RIPRTCN
China	soybean price	yuan.mt	FAPRI	SBPRTCN
China	Cotton average price		Personal	CTPRTCn
China	Cotton procurement price		Personal	CTPCUCn
China	polyester price		Personal	PLPRTCN
China	Northwest area		Chinese statistics yearbook	CTANWCn
China	Yellow river area		Chinese statistics yearbook	CTAYLCn
China	Yangtze area		Chinese statistics yearbook	CTAYZCn
China	other area		Chinese statistics yearbook	CTAOTCn
China	North west yield		Chinese statistics yearbook	CTYNWCn
China	Yellow river yield		Chinese statistics yearbook	CTYYLCn
China	Yangtze yield		Chinese statistics yearbook	CTYYZCn
China	OTHERYIELD		Chinese statistics yearbook	CTYOTCn
China	North west PRODUCTION		Chinese statistics yearbook	CTPNWCn
China	Yellow River PRODUCTION		Chinese statistics yearbook	CTPYLCn
China	Yangtze River PRODUCTION		Chinese statistics yearbook	CTPYZCn
China	other PRODUCTION		Chinese statistics yearbook	CTPOTCn
China	Fiber consumption	1000mt	fiber Organ	FBUPCCn
China	Cotton consumption share		Self	CTFSHCn
China	Synthetic prod cap	1000mt	fiber Organ	SNCPCn

China	Synthetic cap utilization	1000mt	fiber Organ	SNUPCn
China	Synthetic production	1000mt	fiber Organ	SNPRCn
China	Cell prod cap	1000mt	fiber Organ	CLCPCn
China	Cell cap utilization	1000mt	fiber Organ	CLUPCn
China	cell production	1000mt	fiber Organ	CLPRCn
China	Manmade fiber consumption	1000mt	fiber Organ	MFCPCCn
China	other fiber consumption share		Self	WLCSCn
China	Real GDP(billions yuan,1995 baseline)		FAPRI	GDRNCCN
China	Population	millions	FAPRI	NNATTCN
China	Exchange Rate	yuan/$	FAPRI	XRNUSCN
China	GDP deflator		FAPRI	GDDNCCN
China	Corn farm price	yuan/ton	FAPRI	CIPRTCN
China	Cotton tariff rate in quota		FAS	CTDQICN1
China	Cotton tariff rate out of quota		FAS	CTDQICN2
China	Quota	10000mt	FAS	CTDQICN3
China	Polyester tariff		FAS	PLDQICN
China	Total cotton production cost	RMB/hectare	Personal	CTPCTCN
Eastern Europe	Imports		PSD	CTIMTEc
Eastern Europe	cotton ending stock		PSD	CTCESEc
Eastern Europe	Cotton domestic consumption		PSD	CTUMIEc
Eastern Europe	Fiber consumption		PSD	FBCPCEc
Eastern Europe	Cotton consumption share		Self	CTFSHEc
Eastern Europe	MMF production capacity	1000mt	fiber Organ	MMFCPEc
Eastern Europe	MMF capacity utilization	1000mt	fiber Organ	MMFUPEc
Eastern Europe	MMF production	1000mt	fiber Organ	MMFPREc
Eastern and Central Europe	Real GDP		FAPRI	GDRNCEc
Eastern and Central Europe	Population		FAPRI	NNATTEc
Eastern and Central Europe	Exchange rate		FAPRI	XRNUSEc
Eastern and Central Europe	GDP deflator		FAPRI	GDDNCEc

Eastern and Central Europe	wheat price		FAPRI	WHPPSEc
Eastern and Central Europe	corn price		FAPRI	CORNPEc
Eastern and Central Europe	cotton production		PSD	CTPPREc
Eastern and Central Europe	yield		PSD	CTYHAEc
Eastern and Central Europe	Area		PSD	CTAHAIEc
Eastern and Central Europe	Export		PSD	CTEXTEc
Eastern europe	MMF consumption	1000mt	fiber Organ	MFCPCEf
Egypt	Harvested area		PSD	CTAHAIEG
Egypt	Yield		PSD	CTYHAEG
Egypt	Production		PSD	CTPPREG
Egypt	Exports		PSD	CTEXTEG
Egypt	USE Dom. Co		PSD	CTUMIEG
Egypt	Ending Stock		PSD	CTCESEG
Egypt	Import		PSD	CTIMTEg
Egypt	Fiber consumption	MLB	fiber Organ	FBCPCEG
Egypt	Cotton price	le/kentar	Egypt	CSPPREG
Egypt	Cotton consumption share		Self	CTFSHEG
Egypt	MMF production capacity	1000mt	fiber Organ	MMFCPEg
Egypt	MMF capacity utilization	1000mt	fiber Organ	MMFUPEg
Egypt	MMF production	1000mt	fiber Organ	MMFPReg
Egypt	MMF consumption	MLB	fiber Organ	MFCPCEG
Egypt	Real GDP		FAPRI	GDRNCEg
Egypt	Population	millions	FAPRI	NNATTEg
Egypt	Exchange rate	lc/$	FAPRI	XRNUSEg
Egypt	GDP deflator		FAPRI	GDDNCEg
egypt	wheat price		FAPRI	WHPPSEg
egypt	corn price		FAPRI	CORNPEg
egypt	import tariff rate		FAS	CTDQICEg

EU-15	European union FOB price wood pulp		ERS	SEPUPC
Eu-15	cotton area		PSD	CTAHAIEu
Eu-15	cotton yield		PSD	CTYHAEu
Eu-15	cotton production		PSD	CTPPREu
Eu-15	Imports		PSD	CTIMTEu
Eu-15	Exports		PSD	CTEXTEu
Eu-15	Ending Stock		PSD	CTCESEu
Eu-15	Cotton domestic consumption		PSD	CTUMIEu
Eu-15	Polyester price		Seth	PLPRTEu
Eu-15	Fiber consumption	1000mt	fiber Organ	FBCPCEu
Eu-15	cotton consumption share		Self	CTFSHEu
Eu-15	other fiber consumption share		Self	WLCSEu
Eu-15	Cotton Target Price	EUR/Tonne	Eu report	CTTGPEu
Eu-15	Cotton min Price	EUR/Tonne	Eu report	CTMNPEu
Eu-15	Max guaranteed quantity	1000 tonnes	Eu report	CTMGQEu
Eu-15	Real GDP		FAPRI	GDRNCEu
Eu-15	Population		FAPRI	NNATTEu
Eu-15	Exchange rate		FAPRI	XRNUSEu
Eu-15	GDP deflator		FAPRI	GDDNCEu
Eu-15	wheat price	lc/mt	FAPRI	WHPPSEu
Eu-15	corn price		FAPRI	CORNPEu
EU-15+other Western Europe	MMF consumption	1000mt	fiber Organ	MFCPCEu
FSU	MMF production capacity	1000mt	fiber Organ	MMFCPFs
FSU	MMF capacity utilization	1000mt	fiber Organ	MMFUPFs
FSU	MMF production	1000mt	fiber Organ	MMFPRFs
FSU+eastern europe	other fiber consumption share		Self	WLCSEf
India	Northern production		India stat	CTPD1IN
India	Central production		India stat	CTPD2IN
India	Southern production		India stat	CTPD3IN
India	Others production		India stat	CTPD4IN
India	Total area		PSD	CTAHAIN
India	Total production		PSD	CTPPRIN
India	Import		PSD	CTIMTIN

India	Ending stock		PSD	CTCESIN
India	Export		PSD	CTEXTIN
India	Total cotton consumption	Actual	PSD	CTUMIIN
India	Northern region area		India stat	CTAI1IN
India	Central region area		India stat	CTAI2IN
India	Southern region area		India stat	CTAI3IN
India	other region area		India stat	CTAI4IN
India	Northern yield(mt/ha)		India stat	CTYD1IN
India	Central yield		India stat	CTYD2IN
India	Southern yield		India stat	CTYD3IN
India	Others yield		India stat	CTYD4IN
India	total fiber consumption	Actual	India stat	FBPPNIN
India	Cotton consumption share		Self	CTFSHIN
India	MMF production capacity	1000mt	fiber Organ	MMFCPIn
India	MMF capacity utilization	1000mt	fiber Organ	MMFUPIn
India	MMF production	1000mt	fiber Organ	MMFPRIn
India	Cotton support price by government	Rs. Per Quintal	India stat	CTPPSIN
India	sugarcane support price		FAPRI	SJPPSIN
India	polyester price		India stat	PPLRTIN
India	cotton domestic price		India stat	CTPPDIN
India	Total MMF consumption	1000mt	fiber Organ	MFCPCIN
india	other fiber consumption share		Self	WLCSIn
India	GDP		FAPRI	GDRNCIN
India	INPOP, India Population		million	NNATTIN
India	India exchange rate		Seth	XRNUSIN
India	India GDP deflator		Seth	GDDNCIN
India	wheat support price		India stat	WHPPSIN
India	Rainfall(mm)		India stat	RNWRIIN
India	cotton tariff/duty		FAS	CTDQTIN
India	trend		Self	TRENDIN
India	Northern production		India stat	CTPI1IN
India	Central production		India stat	CTPI2IN
India	Southern production		India stat	CTPI3IN

India	Others production		India stat	CTPI4IN
India	MMF production capacity		fiber Organ	MFPCPIN
India	MMF capacity utilization		fiber Organ	MFUCPIN
India	MMF production		fiber Organ	MFPDIN
India	cotton residual		PSD	CTUADIN
Japan	Imports		PSD	CTIMTJp
Japan	USE Dom. Co		PSD	CTUMJp
Japan	Ending Stock		PSD	CTCESJp
Japan	total fiber consumption		http://www.fcc.co.jp/JCFA /english/f4-e_statistics.html	FBCPCJp
Japan	total mill fiber consumption		http://www.fcc.co.jp/JCFA /english/f4-e_statistics.html	MFBCJp
Japan	cotton consumption share		Self	CTFSHJp
Japan	MMF production capacity	1000mt	fiber Organ	MMFCPJp
Japan	MMF capacity utilization	1000mt	fiber Organ	MMFUPJp
Japan	MMF production	1000mt	fiber Organ	MMFPRJp
Japan	MMF consumption	1000mt	fiber Organ	MFCPJp
Japan	MMF mill consumption	1000mt	fiber Organ	MFCPCJp
Japan	fiber used in manufactured products import-export		http://www.fcc.co.jp/JCFA /english/f4-e_statistics.html	FBTDJp
Japan	other fiber consumption share		Self	WLCSJp
Japan	exchange rate	yen/us$	FAPRI	XRNUSJp
Japan	Real GDP	billion Yen	FAPRI	GDRNCJp
Japan	GDP deflator	(current GDP/Real GDP)	FAPRI	GDDNCJp
Japan	population	million persons	FAPRI	NNATTJp
Japan	Cotton Tariff		FAS	CTDQICJp
Japan	Japan textile price index		Seth	TXPIDJp
Japan	Japanese wage rate index in $USD		Seth	WAGEJp
Japan	Japan polyester fiber prices(US cents/lb)		Seth	PLPRTJp
Japan	Japan cotton export		PSD	CTEXTCJp
Japan	Japan cotton production		PSD	CTPPRIJp

Mexico	Area		PSD	CTAHAIMx
Mexico	yield		PSD	CTYHAMx
Mexico	Production		PSD	CTPPRIMx
Mexico	Cotton domestic consumption		PSD	CTUMMx
Mexico	cotton export		PSD	CTEXTCMx
Mexico	Cotton import		PSD	CTIMTMx
Mexico	cotton ending stock		PSD	CTCESMx
Mexico	soybean price		FAPRI	SBPRTMx
Mexico	Total fiber consumption	1000mt	fiber Organ	FBPPNMx
Mexico	Cotton consumption share		Self	CTFSHMx
Mexico	MMF total demand	1000mt	fiber Organ	MFCPCMx
mexico	other fiber consumption share		Self	WLCSMx
Mexico	seedcotton producer price		FAO	CSPPRMx
Mexico	MMF production capacity	1000mt	fiber Organ	MMFCPMx
Mexico	MMF capacity utilization	1000mt	fiber Organ	MMFUPMx
Mexico	MMF production	1000mt	fiber Organ	MMFPRMx
Mexico	Population	1000	FAPRI	NNATTMx
Mexico	Real GDP	Billion peso	FAPRI	GDRNCMx
Mexico	Exchange rate	peso/US$	FAPRI	XRNUSMx
Mexico	GDP deflator		FAPRI	GDDNCMx
Mexico	Cotton tariff		FAS	CTDQICMx
Mexico	wheat producer price		pesco/mt	WHPPRMx
Mexico	corn producer price		FAO	C1PPRMx
Mexico	sorghum producer price		FAPRI	SGPPRMx
Middle east	MMF consumption	1000mt	fiber Organ	MFCPCMe
other Africa	area		PSD	CTAHAIOf
other Africa	yield		PSD	CTYHAOf
other Africa	cotton production		PSD	CTPPROf
other Africa	Imports		PSD	CTIMTOf
other Africa	Exports		PSD	CTEXTOf
other Africa	Ending Stock		PSD	CTCESOf
other Africa	Cotton domestic consumption		PSD	CTUMIOf
Other Africa	MMF production capacity	1000mt	fiber Organ	MMFCPof

Other Africa	MMF capacity utilization	1000mt	fiber Organ	MMFUPof
Other Africa	MMF production	1000mt	fiber Organ	MMFPRof
other Africa	Fiber consumption	1000mt	fiber Organ	FBCPCOf
other Africa	Cotton consumption share		Self	CTFSHOf
other Africa	Real GDP		FAPRI	GDRNCOf
other Africa	Population	millions	FAPRI	NNATTOf
other Africa	GDP deflator		FAPRI	GDDNCOf
other Africa	wheat price	lc/mt	FAPRI	WHPPSOf
other Africa	corn price		FAPRI	CORNPOf
Other Asia	Area		PSD	CTAHAOa
Other Asia	yield		PSD	CTYHAOa
Other Asia	production		PSD	CTPPROa
Other Asia	Imports		PSD	CTIMTOa
Other Asia	Other Asian export		PSD	CTEXTOa
Other Asia	Ending Stock		PSD	CTCESOa
Other Asia	Cotton consumption		PSD	CTUMIOa
Other Asia	MMF production capacity	1000mt	fiber Organ	MMFCPOa
Other Asia	MMF capacity utilization	1000mt	fiber Organ	MMFUPOa
Other Asia	MMF production	1000mt	fiber Organ	MMFPROa
Other Asia	total fiber	1000mt	fiber Organ	FBPPNOa
Other Asia	Cotton share		Self	CTFSHOa
other Asia	MMF consumption	1000mt	fiber Organ	MFCPCOa
other Asia	other fiber consumption share		Self	WLCSOa
Other Asia	Real GDP		FAPRI	GDRNCOa
Other Asia	GDP deflator	(current GDP/Real GDP)	FAPRI	GDDNCOa
Other Asia	population	million persons	FAPRI	NNATTOa
Other Asia	wheat price		FAPRI	WHPPSOa
Other Asia	corn price		FAPRI	CORNPOa
Other Asia	Sorghum price		FAPRI	SOGHPOa
other Europe	Imports		PSD	CTIMTOe

other Europe	cotton ending stock		PSD	CTCESOe
other Europe	ct consumption		PSD	CTUMIOe
other Europe	Real GDP		FAPRI	GDRNCOe
other Europe	Population		FAPRI	NNATTOe
other Europe	Exchange rate		FAPRI	XRNUSOe
other Europe	GDP deflator		FAPRI	GDDNCOe
other Europe	Area		PSD	CTAHAIOe
other Europe	Yield		PSD	CTYHAOe
other Europe	cotton production		PSD	CTPPROe
other Europe	cotton export		PSD	CTEXTOe
other FSU	Cotton area		PSD	CTAHAIFs
other FSU	Cotton yield		PSD	CTYHAFs
other FSU	cotton production		PSD	CTPPRFs
other FSU	Cotton import		PSD	CTIMTFs
other FSU	cotton export		PSD	CTEXTFs
other FSU	cotton ending stock		PSD	CTCESFs
other FSU	cotton consumption		PSD	CTUMIFs
other FSU	Total fiber consumption		fiber Organ	FBCPCFs
other FSU	cotton consumption share		Self	CTFSHFs
other FSU	Real GDP	Billions Reais	FAPRI	GDRNCFs
other FSU	Population	millions	FAPRI	NNATTFs
other FSU	Exchange rate	lc/$	FAPRI	XRNUSFs
other FSU	GDP deflator		FAPRI	GDDNCFs
other FSU	Wheat, No.2 HRW Ordinary Protein	Consumer price	FAPRI	WHPPSFs
other FSU	Corn, No. 2, Yellow	Consumer price	FAPRI	CORNPFs
other FSU	Sorghum, No. 2, Yellow	Consumer price	FAPRI	SOGHPFs
Other Latin America	Area		PSD	CTAHAILa
Other Latin America	Yield		PSD	CTYHALa
Other Latin America	Production		PSD	CTPPRILa
Other Latin America	Imports		PSD	CTIMTLa

Other Latin America	Exports		PSD	CTEXTCLa
Other Latin America	Ending Stock		PSD	CTCESLa
Other Latin America	USE Dom. Co		PSD	CTUMLa
Other Latin America	MMF production capacity	1000mt	fiber Organ	MMFCPLa
Other Latin America	MMF capacity utilization	1000mt	fiber Organ	MMFUPLa
Other Latin America	MMF production	1000mt	fiber Organ	MMFPRLa
Other Latin America	Total fiber consumption	1000mt	fiber Organ	FBCPCLa
Other Latin America	Cotton consumption share		Self	CTFSHLa
Other Latin America	MMF consumption	1000mt	fiber Organ	MFCPCLa
other latin America	Other fiber consumption share		Self	WLCSLa
Other Latin America	Real GDP		FAPRI	GDRNCLa
Other Latin America	Population		FAPRI	NNATTLa
Other Latin America	Exchange rate		FAPRI	XRNUSLa
Other Latin America	GDP deflator		FAPRI	GDDNCLa
Other Latin America	Wheat price		FAPRI	WHPPSLa
Other Latin America	Corn price		FAPRI	CORNPLa
Other Middle east	Cotton area		PSD	CTAHAIOm
Other Middle east	Cotton yield		PSD	CTYHAOm
Other Middle east	Cotton production		PSD	CTPPROm
Other Middle east	Cotton import		PSD	CTIMTOm
Other Middle east	Cotton export		PSD	CTEXTOm
Other Middle east	Cotton ending stock		PSD	CTCESOm
Other Middle east	Cotton domestic consumption		PSD	CTUMOm
Other Middle east	Total fiber consumption	1000mt	fiber Organ	FBCPCOm
Other Middle east	Share of cotton consumption		Self	CTFSHOm
Other Middle east	MMF production capacity	1000mt	fiber Organ	MMFCPOm
Other Middle east	MMF capacity utilization	1000mt	fiber Organ	MMFUPOm
Other Middle east	MMF production	1000mt	fiber Organ	MMFPROm
Other Middle east	Middle east Real GDP index		FAPRI	GDRNCOm
Other Middle east	Population	millions	FAPRI	NNATTOm
Other Middle east	GDP deflator		FAPRI	GDDNCOm
Other Middle east	Wheat price	lc/mt	FAPRI	WHPPSOm
Other Middle east	Corn price		FAPRI	CORNPOm

Pakistan	Harvested area		PSD	CTAHAPK
Pakistan	Yield		PSD	CTYHAPK
Pakistan	Production		PSD	CTPPRPK
Pakistan	Imports		PSD	CTIMTPK
Pakistan	Exports		PSD	CTEXTPK
Pakistan	USE Dom. Co		PSD	CTUMIPK
Pakistan	Ending Stock		PSD	CTCESPK
Pakistan	Seedcotton producer price	RS/maud	Pakistan stat	CTPRIPK
Pakistan	Total fiber consumption	1000mt	fiber Organ	FBPPNPK
Pakistan	Cotton consumption share		Self	CTFSHPK
Pakistan	MMF production capacity	1000mt	fiber Organ	MMFCPPk
Pakistan	MMF capacity utilization	1000mt	fiber Organ	MMFUPPk
Pakistan	MMF production	1000mt	fiber Organ	MMFPRPk
Pakistan	Rice price	RS/mt	fapri	RIPRIPK
Pakistan	Sugarcane price	RS/mt	fapri	SJPRIPK
Pakistan	MMF consumption	1000mt	fiber Organ	MFCPCPK
Pakistan	Other fiber consumption share		Self	WLCSPk
Pakistan	Real GDP		fapri	GDRNCPK
Pakistan	Population		fapri	NNATTPK
Pakistan	Exchange rate		fapri	XRNUSPK
Pakistan	GDP deflator		fapri	GDDNCPK
Pakistan	Tariff for raw cotton		FAS	CTDQIPK
Pakistan	Tariff for MMF		FAS	MFDQIPK
Pakistan	Trend		Self	TRENDPK
Romania	Romania cotton import duty		FAS	CTDQICEc
Russia	Cotton ending stock		PSD	CTCESRu
Russia	Cotton domestic consumption		PSD	CTUMRu
Russia	Cotton import		PSD	CTIMTRu
Russia	Fiber consumption		fiber Organ	FBCPCRu
Russia	Cotton consumption share		Self	CTFSHRu
Russia	Real GDP	Billions Reais	fapri	GDRNCRu
Russia	Population	millions	fapri	NNATTRu
Russia	Exchange rate	lc/$	fapri	XRNUSRu

Russia	GDP deflator		fapri	GDDNCru
Russia	Cotton area		PSD	CTAHAIru
Russia	Yield		PSD	CTYHARu
Russia	Cotton production		PSD	CTPPRIRu
Russia	Cotton export		PSD	CTEXTCRu
SAUDI ARABIA	Exchange rate	lc/$	FAPRI	XRNUSOm
South korea	Imports		PSD	CTIMTKR
South korea	USE Dom. Co		PSD	CTUMKR
South korea	Ending Stock		PSD	CTCESKR
South korea	Total fiber consumption	1000mt	fiber Organ	FBPPNKR
South korea	South Korea chemical fiber production price index		s. Korea stat	MFPPCKR
South korea	South Korea synthetic price index		s. Korea stat	STPPCKR
South korea	Seedcotton producer price		FAO	CTPSDKR
South korea	Cotton consumption share		Self	CTFSHKR
South korea	MMF production capacity	1000mt	fiber Organ	MMFCPKR
South korea	MMF capacity utilization	1000mt	fiber Organ	MMFUPKR
South korea	MMF production	1000mt	fiber Organ	MMFPRKR
South korea	Total MMF consumption	1000mt	fiber Organ	MFCPCKR
South korea	Other fiber consumption share		Self	WLCSKR
South korea	Real GDP	billions	fapri	GDRNCKR
South korea	Exchange rate(nominal)	DCU/US$	fapri	XRNUSKR
South korea	Population	million	fapri	NNATTKR
South korea	GDP deflator		fapri	GDDNCKR
South korea	Cotton import tariff		FAS	CTDQIKR
South korea	Cotton bound tariff rates		FAS	CTDQIKR1
South korea	Cellulosic production	1000mt	fiber Organ	CUPPPKR
South korea	Harvested area	cotton	PSD	CTAHAIKR
South korea	Yield	cotton	PSD	CTYHAKR
South korea	Production	cotton	PSD	CTPPRKR
South korea	Exports	cotton	PSD	CTEXTKR
Taiwan	Imports		PSD	CTIMTTw
Taiwan	USE Dom. Co		PSD	CTUMTw
Taiwan	Ending Stock		PSD	CTCESTw

Taiwan	MMF production capacity	1000mt	fiber Organ	MMFCPTw
Taiwan	MMF capacity utilization	1000mt	fiber Organ	MMFUPTw
Taiwan	MMF production	1000mt	fiber Organ	MMFPRTw
Taiwan	Fiber consumption	1000mt	fiber Organ	FBCPCTw
Taiwan	Cotton consumption share		Self	CTFSHTw
Taiwan	Polyester price		Personal	PLPRTTw
Taiwan	MMF consumption		fiber Organ	MFCPCTw
Taiwan	Other fiber consumption share		Self	WLCSTw
Taiwan	Harvested area		PSD	CTAHAITw
Taiwan	Yield		PSD	CTYHATw
Taiwan	Production		PSD	CTPPRITw
Taiwan	Exports		PSD	CTEXTCtw
Taiwan cotton export	Real GDP(billions ,1990baseline)		fapri	GDRNCTw
Taiwan cotton export	Population(millions)		fapri	NNATTTw
Taiwan cotton export	TARX, exchange rate		fapri	XRNUSTw
Taiwan cotton export	GDP deflator		fapri	GDDNCTw
Taiwan cotton tariff rate			FAS	CTDQITw
Taiwan MMF tariff rate			FAS	PLDQITw
TAWECNu	Wool net -available		Personal	WLCNATw
Time			Self	ZTIME
Total Africa	MMF consumption	1000mt	fiber Organ	MFCPCtf
total Africa	Other fiber consumption share		Self	WLCStf
Total middle east	Other fiber consumption share		Self	WLCSMe
Turkey	Cotton area		PSD	CTAHAITk
Turkey	Cotton yield		PSD	CTYHATk
Turkey	Cotton production		PSD	CTPPRITk
Turkey	Cotton import		PSD	CTIMTTk
Turkey	Cotton export		PSD	CTEXTCTk
Turkey	Cotton ending stock		PSD	CTCESTk
Turkey	Cotton consumption		PSD	CTUMTk
Turkey	MMF production capacity	1000mt	fiber Organ	MMFCPTk
Turkey	MMF capacity utilization	1000mt	fiber Organ	MMFUPTk
Turkey	MMF production	1000mt	fiber Organ	MMFPRTk

Turkey	Corn price		fapri	CORNPTk
Turkey	Wheat price		fapri	WHPPSTk
Turkey	Total fiber consumption	1000mt	fiber Organ	FBCPCTk
Turkey	Share of cotton consumption		Self	CTFSHTk
Turkey	Seedcotton price	lc/mt	FAO	CSPPRTk
Turkey	Polyester price		Seth	PLPRTTk
Turkey	Real GDP		fapri	GDRNCTk
Turkey	Population	millions	fapri	NNATTTk
Turkey	Exchange rate	lc/$	fapri	XRNUSTk
Turkey	GDP deflator		fapri	GDDNCTk
Turkey	Import tariff	%	FAS	CTDQICTk
Turkey	Export surcharge	Cents/kg	FAS	CTEXTTk
UK	U.K. domestic wool 50s CIF equivalent		ERS	WLPCIFUk
US	Cellulosics(Rayon) price		ERS	USRSPC
USA	Cotton export	1000mt	PSD	CTEXTUs
USA	USA cotton import	1000mt	PSD	CTIMTUs
USA	USA cotton production	1000mt	PSD	CTPPRUs
USA	Cotton domestic consumption	1000mt	PSD	CTUMIUs
USA	Total harvest area	1000ha	PSD	CTHAUs
USA	Cotton ending stock		PSD	CTCESUs
USA	USA Polyester price		PSD	USSSPC
USA	Synthetic producing capacity	MLB	Fiber Organ	SNCCPUs
USA	Synthetic cap utilization	MLB	Fiber Organ	SNUCPUs
USA	Synthetic production	MLB	Fiber Organ	SNPPRUs
USA	Cell prod capacity	MLB	Fiber Organ	CLCCPUs
USA	Cell cap utilization	MLB	Fiber Organ	CLUCPUs
USA	Cell production	MLB	Fiber Organ	CLPPRUs
USA	MMF export	MLB	Fiber Organ	EXMMFUs
USA	MMF import	MLB	Fiber Organ	IMMMFUs
USA	MMF residual	MLB	Fiber Organ	MFRSUs
USA	Delta cotton price		ERS	CTLPUd
USA	Effective Market Price (EPM)	Delta	ERS	EPMUd

USA	Government Payments/Deficiency Payments	Delta	ERS	CCPUd
USA	Effective Support Price (PSe)	Delta	ERS	ESPUd1
USA	Final Price	Delta	ERS	ESPUd
USA	Cotton expected NR(d)	Delta	Self	CTNRUd
USA	Southeast cotton price		cents/pound	CTLPUse
USA	Effective Market Price (EPM)	southeast	ERS	EPMUse
USA	Government Payments/Deficiency Payments	southeast	ERS	CCPUse
USA	Effective Support Price (PSe)	southeast	ERS	ESPUse1
USA	Final Price	southeast	ERS	ESPUse
USA	Cotton expected NR(d)	southeast	Self	CTNRUse
USA	Southwest cotton price		Cents/lb	CTLPUsw
USA	Effective Market Price (EPM)	southwest	ERS	EPMUsw
USA	Government Payments/Deficiency Payments	southwest	ERS	CCPUsw
USA	Effective Support Price (PSe)	southwest	ERS	ESPUsw1
USA	Final Price	southwest	ERS	ESPUsw
USA	Cotton expected NR(d)	south west irrigated	Self	CTNRUswi
USA	Cotton expected NR(d)	southwest dryland	Self	CTNRUswd
USA	Inter-price variable	price-transfer	self	a1
USA	West cotton price		Cents/lb	CTLPUw
USA	Effective Market Price (EPM)	West	ERS	EPMUw
USA	Government Payments/Deficiency Payments	West	ERS	CCPUw
USA	Effective Support Price (PSe)	West	ERS	ESPUw1
USA	Final Price	West	ERS	ESPUw
USA	Cotton expected NR(d)	West	Self	CTNRUw
USA	Delta cotton cost	$/planted acre	ERS	CTPCUd

USA	Southeast cotton cost	$/planted acre	ERS	CTPCUse
USA	Southwest dryland cost	$/planted acre	ERS	CTPCUswd
USA	West cotton cost	$/planted acre	ERS	CTPCUw
USA	West wheat cost	$/planted acre	ERS	WHCUw
USA	Southeast soybean cost	$/planted acre	ERS	SBCUse
USA	Southeast corn cost	$/planted acre	ERS	CNCUse
USA	Southwest sorghum cost	$/planted acre	ERS	SGCUsw
USA	Southwest wheat cost	$/planted acre	ERS	WHCUsw
USA	Delta rice cost	$/planted acre	ERS	RCCUd
USA	Delta soybean cost	$/planted acre	ERS	SBCUd
USA	Delta planted area	1000acre	ERS	CTPAUd
USA	Southeast planted area	1000acre	ERS	CTPAUse
USA	Southwest irrigated planted area	1000acre	ERS	CTPAUswi
USA	Delta harvested area	1000acre	ERS	CTHAUd
USA	Southeast harvested area	1000acre	ERS	CTHAUse
USA	Southwest irrigated harvested area	1000acre	ERS	CTHAUswi
USA	Delta yield		ERS	CTYDUd
USA	Southeast yield		ERS	CTYDUse
USA	Southwest irrigated yield		ERS	CTYDUswi
USA	Southwest dryland yield		ERS	CTYDUswd
USA	Delta production	1000bales	ERS	CTPDUd
USA	Southeast production	1000bales	ERS	CTPDUse
USA	Southwest irrigated production	1000bales	ERS	CTPDUswi

USA	Southwest dryland production	1000bales	ERS	CTPDUswd
USA	West production	1000bales	ERS	CTPDUw
USA	Total upland cotton	1000bales	ERS	ULCTUs
USA	ELS cotton production	1000 480lb-bales	ERS	ELSCTPUs
USA	USA farm price		National cotton concil	CTFMPUs
USA	USA cotton Menphis price		National cotton concil	CTMPPUs
USA	World cotton adjusted price		(USDA., Leslie meyer)	WCAPPUs
USA	Composite output price: apparel and related goods		Seth	APOUTPUs
USA	Rug and other cover floor output index		Seth	CFOUTPUs
USA	Broadwoven & Other Texiles 1992=100		Seth	BWOUTPUs
USA	Input price index:carpets and rugs		Seth	CRIPPUs
USA	Input price index: broadwoven & other texiles		Seth	BWIPPUs
USA	Domestic wool price		ERS	WLPRUs
USA	Total apparel fiber consumption	MLB	Fiber Organ	TAFCUs
USA	Apparel fiber import	MLB	Fiber Organ	AFIMUs
USA	Apparel fiber export	MLB	Fiber Organ	AFEXUs
USA	Us apparel production	MLB	Fiber Organ	USAPD
USA	Cotton share apparel	MLB	Fiber Organ	CTSADUs
USA	Wool share apparel	MLB	Fiber Organ	WLSADUs
USA	US floor covering fiber demand	MLB	Fiber Organ	FCMDUs
USA	US floor covering production	MLB	Fiber Organ	FLCUs
USA	Cotton share floor covering	MLB	Fiber Organ	CTFLUs
USA	Wool share floor covering	MLB	Fiber Organ	WLFLUs
USA	Home textile fiber demand	MLB	Fiber Organ	HTMDUs
USA	Home textile production	MLB	Fiber Organ	HTPUs
USA	Ct share of home textile production	MLB	Fiber Organ	CTSHTUs
USA	Wool share of home textile production	MLB	Fiber Organ	WLSTSUs
USA	Other home textile production	MLB	Fiber Organ	OTPUs
USA	Cotton share from other textile	MLB	Fiber Organ	CTSOPUs
USA	Wool share from other textile	MLB	Fiber Organ	WLSOPUs
USA	Semi-manufacture export	1000mt	Fiber Organ	SMEXUs
USA	Semi-manufacture export cotton share	1000mt	Fiber Organ	SMCSEXUs

USA	Semi-manufacture export wool share	1000mt	Fiber Organ	SMWSEXUs
USA	Semi-manufacture import	1000mt	Fiber Organ	SMIMUs
USA	Semi-manufacture import cotton share	1000mt	Fiber Organ	SMCSIMUs
USA	Semi-manufacture import wool share	1000mt	Fiber Organ	SMWSIMUs
USA	Total mill demand of cotton in the USA	MLB	Fiber Organ	CTMDUs
USA	Total mill demand of wool in the USA	1000mt	Fiber Organ	WLMDUs
USA	Total mill demand of MMF in the USA	1000mt	Fiber Organ	MMMDUs
USA	Total domestic consumption of man-made fiber	1000mt	Fiber Organ	MMDDUs
USA	Cellu fiber mill consumption	MLB	Fiber Organ	CLDCNUS
USA	Synthetic fiber mill consumption	MLB	Fiber Organ	SNDCNUs
USA	MMF semi-manufacture export	1000mt	Fiber Organ	SMMFEXUs
USA	Cotton semi-manufacture export	1000mt	Fiber Organ	SMCTEXUs
USA	Wool semi-manufacture export	1000mt	Fiber Organ	SMWLEXUs
USA	Semi-manufacture import cotton	1000mt	Fiber Organ	SMCTIMUs
USA	Wool semi-manufacture import	1000mt	Fiber Organ	SMWLIMUs
USA	MMF semi-manuture import	1000mt	Fiber Organ	SMMFIMUs
USA	Cotton consumption in the US from apparel,do	MLB	Fiber Organ	CTMDAUs
USA	Wool demand in the US from apparel	MLB	Fiber Organ	WLMDAUs
USA	Man-made fiber demand in the US from apprael	MLB	Fiber Organ	MMMDAUs
USA	Cotton consumption in the US from floor covering	MLB	Fiber Organ	CTMDFUs
USA	Wool demand from floor covering	MLB	Fiber Organ	WLMDFUs
USA	Man-made fiber demand from floor covering	MLB	Fiber Organ	MMMDFUs
USA	Cotton consump from textile	MLB	Fiber Organ	CTMHTUs
USA	Wool consump from textile	MLB	Fiber Organ	WLMHTUs
USA	MMF consump from textile	MLB	Fiber Organ	MMMHTUs
USA	Cotton consumption in the US from other textile production	MLB	Fiber Organ	CTMDOUs
USA	Wool demand from others	MLB	Fiber Organ	WLMDOUs
USA	Man-made fiber demand from others	MLB	Fiber Organ	MMMOUs
USA	Cotton target price	cents/lb	ERS	CTPTGUs
USA	Rice target price	hundredweight $	ERS	RCPTGUs
USA	Corn target price	$/bu	ERS	CNPTGUs

USA	Soybean Target price	$/bu	ERS	SBPTGUs
USA	Sorghum target price	$/bu	ERS	SGPTGUs
USA	Wheat target price	$/bu	ERS	WTPTGUs
USA	Rice farm price		ERS	RCNAVUs
USA	Corn farm price		ERS	CNNAVUs
USA	Soybean farm price		ERS	SBNAVUs
USA	Sorghum farm price	$/cwt	ERS	SGNAVUs
USA	Wheat farm price		ERS	WTNAVUs
USA	Southwest soghum final price		ERS	SGPUsw
USA	Southwest wheat price		ERS	SWHPUsw
USA	West wheat price		ERS	WHPUw
USA	South east soybean price		ERS	SBPUse
USA	Delta soybean price		ERS	SBPUd
USA	Southeast corn price		ERS	CORNPUse
USA	Rice price		ERS	RICEPUd
USA	Delta cotton Naïve yield pred(iction)		Self	CTNYUd
USA	Southeast cotton naïve yield pred		Self	CTNYUse
USA	Southwest irrigated cotton naïve yield pred		Self	CTNYUswi
USA	Southwest dryland cotton naïve yield pred		Self	CTNYUswd
USA	West cotton naïve yield pred		Self	CTNYUw
USA	West wheat naïve yield pred		Self	WHNYUw
USA	Southwest wheat naïve yield pred		Self	WHNYUsw
USA	Southwest sohghum naïve yield pred		Self	SGNYUsw
USA	Southeast soybean naïve yield pred		Self	SBNYUse
USA	Delta soybean naive yield pred		Self	SBNYUd
USA	Southeast corn naïve yield pred		Self	CNNYUse
USA	Rice naïve yield pred		Self	RCNYUd
USA	National cotton production cost		FAPRI	CTPCUs
USA	Corn production cost		ERS	CNPCUs
USA	Soybean production cost		ERS	SBPCUs
USA	Wheat production cost		ERS	WHPCUs
USA	Sorghum production cost		ERS	WGPCUs
USA	Rice production cost		ERS	RCPCUs

USA	USA	Petroleum Spot Price	FAPRI	AOILP
USA	USA	Real GDP	FAPRI	GDRNCUs
USA	USA	GDP deflator	FAPRI	GDDNCUs
USA	USA	Population	FAPRI	NNATTUs
USA	Interest, Moody's AAA Bond		FAPRI	ZINTAAA
USA	US producer price index		FAPRI	PPIUs
USA	SAL0SS, Synthetic processing loss		Seth	SYNLUs
USA	UALOSS, Cellulosic processing loss		Seth	CELLUs
USA	CFLOSS, Cotton processing loss		Seth	COTONUs
USA	WFLOSS, Wool processing loss		Seth	WOOLUs
USA	Floor cover import		Fiber Organ	FCIMUs
USA	Floor coverig export		Fiber Organ	FCEXUs
USA	Home textile import		Fiber Organ	HTIPUs
USA	Home textile export		Fiber Organ	HTEXUs
USA	USREXTWR, cotton US trade weighted exchange rate		Seth	TRWEXUs
USA	Cotton Direct payments	$/lb	ERS	CDPUs
USA	Rice Direct payments	$/cwt	ERS	RDPUs
USA	Corn Direct payments	$/bu	ERS	CRDPUs
USA	Soybean Direct payments	$/bu	ERS	SBDPUs
USA	Sorghum Direct payments	$/bu	ERS	SGDPUs
USA	Wheat Direct payments	$/bu	ERS	WHDPUs
USA	Weight for region price calculation		Self	WGTUs1
USA	Weight for region price calculation(1-weight)		Self	WGTUs2
USA	Cotton loan Rate		ERS	CTLRUs
USA	Rice loan rate		ERS	RCLRUs
USA	Corn loan rate		ERS	CNLRUs
USA	Soybean loan rate		ERS	SYLRUs
USA	Sorghum loan rate		ERS	SGLRUs
USA	Wheat loan rate		ERS	WHLRUs
USA Delta	Program participation rate		ERS	CTPPRTUd
USA Southeast	Program participation rate		ERS	CTPPRTUe
USA Southwest	Cotton program participation rate		ERS	CTPPRTUu

USA West	Cotton program participation rate		ERS	CTPPRTUw
USA Southwest	Wheat program participation rate		ERS	WTPPRTUu
USA West	Wheat program participation rate		ERS	WTPPRTUw
USA Southwest	Sorghum program participation rate		ERS	SGPPRTUu
USA Southeast	Corn program participation rate		ERS	CNPPRTUe
USA Delta	Rice program participation rate		ERS	RCPPRTUd
USA Delta	Cotton Effective Diversion Payments	$/acre	ERS	CTEDPUd
USA Southeast	Cotton Effective Diversion Payments	$/acre	ERS	CTEDPUe
USA Southwest irrigated	Cotton Effective Diversion Payments	$/acre	ERS	CTEDPUui
USA Southwest dryland	Cotton Effective Diversion Payments	$/acre	ERS	CTEDPUud
USA West	Cotton Effective Diversion Payments	$/acre	ERS	CTEDPUw
USA Delta	Cotton Conservation Reserve Program Enrollment	1000 acre	ERS	CTCRPUd
USA Southeast	Cotton Conservation Reserve Program Enrollment	1000acre	ERS	CTCRPUe
USA Southwest irrigated	Cotton Conservation Reserve Program Enrollment	1000acre	ERS	CTCRPui
USA Southwest dryland	Conservation Reserve Program Enrollment	1000acre	ERS	CTCRPuds
USA West	Conservation Reserve Program Enrollment	1000acre	ERS	CTCRPUw
USA Delta	Cotton insurance	1000 acres	ERS	CTISUUd
USA Southeast	Cotton insurance	1000 acres	ERS	CTSUUe
USA Southwest irrigated	Cotton insurance	1000 acres	ERS	CTSUUui
USA Southwest dryland	Cotton insurance	1000 acres	ERS	CTSUUud
USA West	Cotton insurance	1000 acres	ERS	CTSUUw
USA	Delta rain	inch	ERS	RAINUd
USA	Southeast rain	inch	ERS	RAINUe
USA	Southwest rain	inch	ERS	RAINUu
USA	West rain	inch	ERS	RAINUw
USA Delta	RiceExpected net return(deflated)		Self	RCNRUd
USA Delta	Soybean Expected NR(D)		Self	SBNRUd
USA Southeast	Soybean Expected NR(D)		Self	SBNRUse
USA Southeast	Corn Expected NR(D)		Self	CNNRUse

USA Southwest	Sorghum Expected NR(D)		Self	GHNRUsw
USA Southwest	Wheat Expected NR(D)		Self	WHNRUsw
USA West	Wheat Expected NR(D)		Self	WHNRUw
USA	ELS farm price	$/pound	ERS	CTELSUs
USA Southwest irrigated	Cotton cost	$/ acre	ERS	CTPCUswi
USA Southwest dryland	Planted area	1000acre	ERS	CTPAUswd
USA West	Planted area	1000acre	ERS	CTPAUw
USA Southwest dryland	Harvested area	1000acre	ERS	CTHAUswd
USA West	Harvested area	1000acre	ERS	CTHAUw
USA West	yield		ERS	CTYDUw
USA	USA cotton market price		ERS	CTMPUs
USA	USA cotton Step-two payments		ERS	CTSWPUs
USA	ATC quato growth rate		ERS	QGRTUs
Uzberkistan	Area		PSD	CTAHAIUz
Uzberkistan	Yield		PSD	CTYHAUz
Uzberkistan	Production		PSD	CTPPRIUz
Uzberkistan	Ending Stock		PSD	CTCESUz
Uzberkistan	Exports		PSD	CTEXTCUz
Uzberkistan	Cotton consumption		PSD	CTUMUz
Uzberkistan	Cotton price	soums/mt	FAO	CSPPRUz
Uzberkistan	Fiber consumption	1000mt	Fiber Organ	FBCPCUz
Uzberkistan	Cotton consumption share		Self	CTFSHUz
Uzberkistan	Real GDP	Billions Reais	FAPRI	GDRNCUz
Uzberkistan	Population	millions	FAPRI	NNATTUz
Uzberkistan	Exchange rate	lc/$	FAPRI	XRNUSUz
Uzberkistan	GDP deflator		FAPRI	GDDNCUz
Uzberkistan	Wheat	Russia price	FAPRI	WHPPSRu
Uzberkistan	Cotton import		PSD	CTIMTUz
Western Europe	MMF production capacity	1000mt	Fiber Organ	MMFCPEu
Western Europe	MMF capacity utilization	1000mt	Fiber Organ	MMFUPEu
Western Europe	MMF production	1000mt	Fiber Organ	MMFPREu
world	Raw sugar price	cents/lb	FAPRI	SGPRWD

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